www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

JVC

SERVICE MANUAL

VHS VIDEO MOVIE

GR-AX10EG/EK/EA/GR-AX107EG

for Saudi Arabia

Free service manuals
Gratis schema's
Digitized by
www.freeservicemanuals.info

CCD
Charge Coupled Device

AF
FULL RANGE AF

videomovie

VHS C
PAL

HQ
High Quality

SPECIFICATIONS *(The specifications shown pertain specifically to the model GR-AX10EG)*

Format	:	VHS PAL standard
Power source	:	DC 6 V ⎓
Power consumption	:	8 W
Signal system	:	PAL-type
Video recording system	:	Luminance: FM recording Colour: Converted sub-carrier direct recording Conforms to VHS standard
Cassette	:	VHS C cassette
Tape speed	:	23.39 mm/sec
Recording time Max.	:	45 minutes (with EC-45 cassette)
VIDEO		
Output	:	1 Vp-p, 75 ohms, unbalanced (via AV OUT connector)
S/N ratio	:	More than 43 dB (with Rohde & Schwarz noise meter)
AUDIO		
Output	:	–6 dBs, 1 k-ohm (via AV OUT connector).
Microphone input	:	–68 dBs, high impedance, unbalanced
CAMERA		
Pick up	:	1/3"-format CCD
Minimum required illumination	:	3 lux (Gain-Up ON)
Illumination range	:	3 to 100,000 lux
Lens	:	F/1.4, f = 6.7 to 54 mm, 8:1 power zoom lens with auto iris and macro control, filter diameter 43 mm
Viewfinder	:	Electronic viewfinder with 0.6" black/white CRT
Selectable high-speed shutter	:	Switchable (1/50, 1/60, 1/125, 1/250, 1/500, 1/1000, 1/4000 second)
White balance adjustment	:	Full-auto
GENERAL		
Operating temperature	:	0°C to +40°C
Operating humidity	:	35% to 80%
Storage temperature	:	–20°C to +50°C
Weight	:	Approx. 800 g (without Lens cap, Pad, Thumb rest, Video light)
Dimensions	:	110(W) x 120(H) x 163(D) mm (incl. viewfinder)

AA-V3EG SPECIFICATIONS

Power requirement	:	AC 110 to 240 V~, 50/60 Hz
Power consumption	:	22 W
Output	:	DC 8.5 V ⎓, 1.3 A (Charge), DC 6 V ⎓, 1.8 A (VideoMovie)
Charging system	:	Constant current, peak detection, timer controlled
Dimensions	:	145(W) x 42(H) x 69(D) mm
Weight	:	Approx. 380 g

VIDEO LIGHT SPECIFICATIONS

Power consumption	:	3 W
Video light bulb	:	Holgen bulb
Life span	:	Approx. 50 hours
Colour temperature	:	3,200K
Dimensions	:	46(W) x 36(H) x 46(D) mm
Weight	:	Approx. 20 g

PROVIDED ACCESSORIES

AC power adapter/battery charger AA-V3EG
Battery pack BN-V14U
Battery for clock operation CR2025
VHS-C cassette EC-30
A/V output cable
Video light

Design and specifications subject to change without notice.

COPYRIGHT © 1991 VICTOR COMPANY OF JAPAN, LTD.

Published in Helloo, Holland.

No. 86162
August 1991

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

NOTE: EG(S) in this manual mean "GR-AX107EG for Saudi Arabia" respectively.

TABLE OF CONTENTS

Section	Title	Page
	Important Safety Precautions	
	INSTRUCTIONS	
	1. SERVICE CAUTIONS & DISASSEMBLY	
1.1	PRECAUTIONS	1-1
1.2	REQUIRED TEST EQUIPMENT, FIXTURES/TOOLS AND OTHERS	1-1
1.2.1	Test equipment, etc.	1-1
1.2.2	Special test equipment and tools required for adjustment	1-2
1.2.3	Main screws to deal with disassembly/assembly	1-2
1.3	SMC Replacement Tools (YTU94038A/B/C)	1-3
1.3.1	Outline	1-3
1.3.2	Kit description	1-3
1.4	BASIC KNOWLEDGE OF VIDEOMOVIE SMC* PARTS REPLACEMENT	1-5
1.5	DISASSEMBLY OF CAMERA SECTION	1-7
1.5.1	Operation unit	1-7
1.5.2	Electronic viewfinder	1-7
1.5.3	Cassette cover assembly, Front panel assembly	1-7
1.5.4	Microphone unit, White balance sensor	1-8
1.5.5	Upper cover assembly	1-8
1.5.6	Rear cover assembly	1-8
1.5.7	Lower case assembly	1-8
1.5.8	Camera section	1-9
1.5.9	Hookup for inspection and adjustment of camera section	1-9
1.5.10	VIDEO board	1-10
1.5.11	DC-DC converter	1-10
1.5.12	SSG board	1-10
1.5.13	AF board	1-11
1.5.14	CCD board	1-11
1.5.15	Replacement of CCD image sensor	1-11
1.5.16	OP (optical) block assembly	1-12
1.5.17	Electronic viewfinder	1-12
1.6	DISASSEMBLY OF DECK SECTION	1-13
1.6.1	Hookup for inspection and adjustment of deck section	1-13
1.6.2	JACK board	1-14
1.6.3	VTR board	1-14
1.6.4	PRE REC ASSY	1-15
1.6.5	SENSOR board	1-15
1.6.6	Replacement of cassette housing	1-15
1.6.7	To take out cassette tape	1-16
1.6.8	Replacement of upper drum	1-16
1.6.9	Checkup and adjustment of mechanism phase	1-17
1.7	INSPECTION AND MAINTENANCE	1-19
1.7.1	Standard maintenance/inspection schedule of main components	1-20
1.7.2	Remarks	1-20
	2. DECK SECTION ADJUSTMENT	
2.1	PREPARATION	2-1
2.1.1	Precaution	2-1
2.1.2	Connection for adjustment	2-1
2.2	SERVO CIRCUIT AND INTERCHANGEABILITY	2-2
2.3	PRE AMP CIRCUIT	2-5
2.4	LUMINANCE (Y) SIGNAL CIRCUIT	2-6
2.5	COLOR (C) SIGNAL CIRCUIT	2-9
2.6	AUDIO CIRCUIT	2-11
	3. CAMERA SECTION ADJUSTMENT	
3.1	PREPARATION	3-4
3.1.1	Precaution	3-4
3.1.2	Connection for adjustment	3-4
3.2	LUMINANCE (Y) SIGNAL CIRCUIT	3-5
3.3	COLOR (C) SIGNAL CIRCUIT	3-7
3.3.1	Standard indoor mode	3-7
3.4	auto focus adjustment	3-10
3.4.1	Connection for adjustment	3-10
3.4.2	Adjustment	3-11
3.5	ELECTRONIC VIEWFINDER (E. VF) ADJUSTMENT	3-13
	4. OVERALL WIRING AND BLOCK DIAGRAMS	
4.1	OVERALL WIRING	4-1
4.2	CAMERA BLOCK DIAGRAM	4-6
4.3	POWER SYSTEM BLOCK DIAGRAM	4-9
4.4	Y/C BLOCK DIAGRAM	4-11
4.5	SERVO BLOCK DIAGRAM	4-13
	5. DIAGRAMS AND CIRCUIT BOARDS	
5.1	CIRCUIT BOARD LOCATIONS	5-1
5.2	SCHEMATIC DIAGRAM NOTES	5-2
5.3	REPLACING SUBMINIATURE "CHIP" PARTS	5-3
5.4	REGULATOR SCHEMATIC DIAGRAM	5-5
5.5	SERVO SCHEMATIC DIAGRAM	5-7
5.6	MECHACON SCHEMATIC DIAGRAM	5-9
5.7	AUDIO SCHEMATIC DIAGRAM	5-11
5.8	AUDIO SCHEMATIC DIAGRAM	5-13
5.9	Y/C SCHEMATIC DIAGRAM	5-15
5.10	PRE/REC SCHEMATIC DIAGRAM	5-17
5.11	VTR CIRCUIT BOARD	5-20
5.12	JACK, TRIGGER & UPPER DRUM CIRCUIT BOARD	5-26
5.13	OPERATION (DECK) SCHEMATIC DIAGRAM	5-29
5.14	CCD SCHEMATIC DIAGRAM	5-31
5.15	CCD CIRCUIT BOARD	5-33
5.16	SSG SCHEMATIC DIAGRAM	5-35
5.17	SSG CIRCUIT BOARD	5-37
5.18	AUTO FOCUS SCHEMATIC DIAGRAM	5-39
5.19	AF CIRCUIT BOARD	5-41
5.20	CPU, REAR, JUNCTION & TALLY SCHEMATIC DIAGRAMS	5-45
5.21	CPU, REAR, JUNCTION & TALLY CIRCUIT BOARDS	5-47
5.22	VIDEO SCHEMATIC DIAGRAM	5-51
5.23	VIDEO CIRCUIT BOARD	5-55
5.24	ELECTRONIC VIEWFINDER SCHEMATIC DIAGRAM	5-57
5.25	ELECTRONIC VIEWFINDER CIRCUIT BOARD	5-59
5.26	OPERATION (CAMERA) SCHEMATIC DIAGRAM	5-61
	6. MECHANICAL PARTS AND EXPLODED VIEWS	
6.1	PACKING ASSEMBLY <M1>	6-1
6.2	FINAL ASSEMBLY <M2>	6-3
6.3	MECHANISM ASSEMBLY <M3>	6-6
6.4	OPTICAL BLOCK ASSEMBLY <M4>	6-8
6.5	ELECTRONIC VIEWFINDER ASSEMBLY <M5>	6-9
6.6	DC LIGHT ASSEMBLY (VL-V3E) <M6>	6-10

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

Section	Title	Page

7. ELECTRICAL PARTS LIST

VTR BOARD ASSEMBLY <01> 7-1
JACK BOARD ASSEMBLY <02> 7-10
PRE REC BOARD ASSEMBLY <03> 7-10
SENSOR BOARD ASSEMBLY <04> 7-10
TRIGGER BOARD ASSEMBLY <05> 7-11
END SENSOR BRACKET ASSEMBLY <08> 7-11
CPU BOARD ASSEMBLY <11> 7-11
VIDEO BOARD ASSEMBLY <12> 7-12
SSG BOARD ASSEMBLY <13> 7-16
CCD BOARD ASSEMBLY <14> 7-18
AF BOARD ASSEMBLY <15> 7-18
TALLY BOARD ASSEMBLY <16> 7-20
JUNCTION BOARD ASSEMBLY <17> 7-20
REAR BOARD ASSEMBLY <18> 7-21
DRUM BOARD <40> 7-21
E.VF BOARD ASSEMBLY <50> 7-22

8. TECHNICAL INFORMATIONS

8.1 MECHACON CPU ([0] [1] VTR IC301) PIN FUNCTIONS 8-1
8.2 AUTOMATIC OPERATION OF MECHACON 8-3
8.3 EMERGENCY DISPLAY 8-3
8.4 SERVO LSI ([0] [1] VTR IC101) PIN FUNCTIONS 8-4
8.5 CAMERA CPU ([1] [1] CPU IC1) PIN FUNCTIONS 8-6
8.6 AUTO FOCUS CPU ([1] [5] AF IC3) PIN FUNCTIONS 8-7
8.7 AUTO WHITE PRESET MODE 8-9
8.8 DC LIGHT 8-9
8.9 SERVICE KNOW-HOW 8-10

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▒) parts are critical for safety.
Replace only with specified part numbers.
Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
Caution for continued protection against fire hazard.
Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
1) Insulation Tape
2) PVC tubing
3) Spacers
4) Insulation sheets for transistors
5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

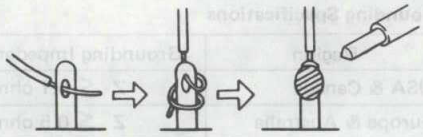


Fig. 1

7. Observe that wires do not contact heat producing parts (heat-sinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10—15 kg of force in any direction will not loosen it.

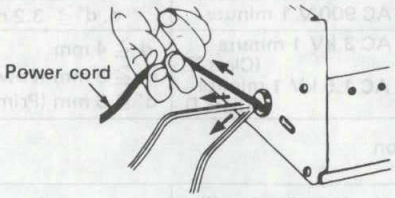


Fig. 2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

1) **Connector part number** : E03830-001
2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
3) **Replacement procedure**
(1) Remove the old connector by cutting the wires at a point close to the connector.
Important : Do not reuse a connector (discard it).

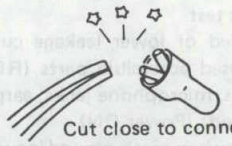


Fig. 3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

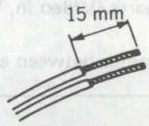


Fig. 4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

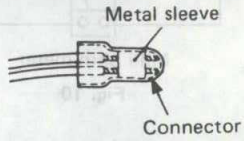


Fig. 5

(4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

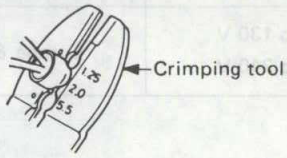


Fig. 6

(5) Check the four points noted in Fig. 7.

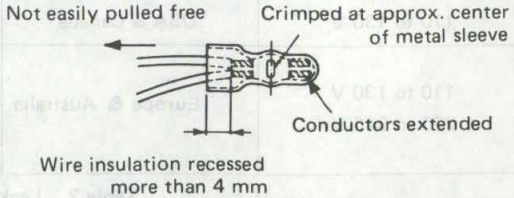

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig. 7

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

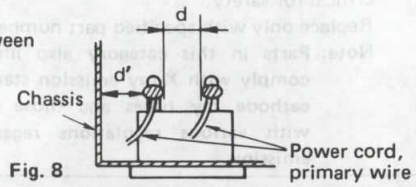


Fig. 8

4. Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method: (Power ON)

Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

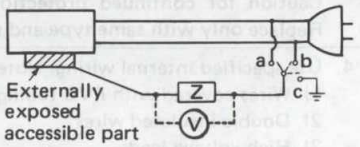


Fig. 9

5. Grounding (Class I model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

Measuring Method:

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

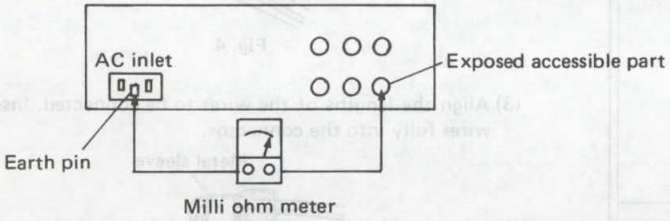


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R≧1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	—	AC 900 V 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R≧10 MΩ /500 V DC	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF, 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

Digitized by WWW.FREESERVICEMANUALS.INFO

JVC

INSTRUCTIONS

GR-AX10

CAMERA-RECORDER/PLAYER

MANUEL D'INSTRUCTIONS: CAMERA-ENREGISTREUR/LECTEUR
BEDIENUNGSANLEITUNG: KAMERA-RECORDER
MANUAL DE INSTRUCCIONES: CAMARA/GRABADORA
GEBRUIKSAANWIJZING: KAMERA/RECORDER
BRUKSANVISNING: KAMERA/BANDSPELARE
MANUALE DI ISTRUZIONI: TELECAMERA/REGISTRATORE

Specifically for the GR-AX10EG/AA-V3EG
Spécial pour le GR-AX10EG/AA-V3EG
Für modellausführung GR-AX10EG/AA-V3EG
Especialmente para la GR-AX10EG/AA-V3EG
Speciaal voor de GR-AX10EG/AA-V3EG
Speciellt avsedd för GR-AX10EG/AA-V3EG
Specifico per il GR-AX10EG/AA-V3EG

videomovie

VHS C PAL

HQ High Quality

CCD Charge Coupled Device

AF FULL RANGE AF

YU30052-224

Published in Heiloo, Holland.

SAFETY PRECAUTIONS

ENGLISH

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

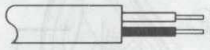
This equipment should be used with DC 6V ⎓ only.
CAUTION:
To prevent electric shocks and fire hazards, do NOT use any other power source.

The AA-V3EG AC Power Adapter/Battery Charger should be used with 110 — 240 V∿, 50/60 Hz only.
Caution:
To prevent electric shocks and fire hazards, do NOT use any other power source.

IMPORTANT (In the United Kingdom)
Mains Supply (240 V∿, 50 Hz only)

IMPORTANT

Do not make any connection to the Larger Terminal coded E or Green. The wires in the mains lead are coloured in accordance with following code:

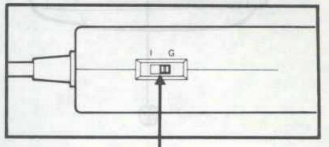


If these colours do not correspond with the terminal identifications of your plug, connect as follows:
Blue wire to terminal coded N (Neutral) or coloured black.
Brown wire to terminal coded L (Live) or coloured Red.
If in doubt — consult a competent electrician.
Note
We recommend that you should disconnect the AC cord from the outlet.

VHS C PAL HQ High Quality

- VideoMovie is designed exclusively for the VHS-C video cassette. Only cassettes marked VHS-C can be used with this unit.
- HQ VHS is compatible with existing VHS equipment.

Warning on lithium battery
The battery used in this device may present a fire or chemical burn hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate.
Replace battery with Panasonic (Matsushita Electric) CR2025; use of another battery may present a risk of fire or explosion.
- Dispose of used battery promptly.
- Keep away from children.
- Do not disassemble and do not dispose of in fire.



ATTENTION:
The system select switch on the side of the optional RF-V3E RF unit has been set to G (Continental PAL, 5.5 MHz).

CAUTION:
To prevent shock, do not open the cabinet. No user serviceable parts inside. Refer servicing to qualified personnel.

NOTES:
- The rating plate (serial number plate) and safety caution are on the bottom of the main unit.
- The rating plate (serial number plate) of the viewfinder is on its bottom.
- The rating plate (serial number plate) of the AC power adapter/battery charger is on its bottom.

This unit is produced to comply with Directives 76/889/EEC, 82/499/EEC, 87/308/EEC and Standard IEC Publ. 65

COPYRIGHT © 1991 VICTOR COMPANY OF JAPAN, LTD.

Printed in Japan

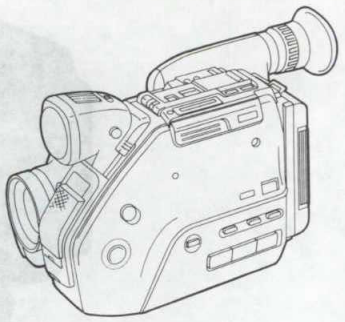
www.freeservicemanuals.info
3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

MAJOR FEATURES

ENGLISH

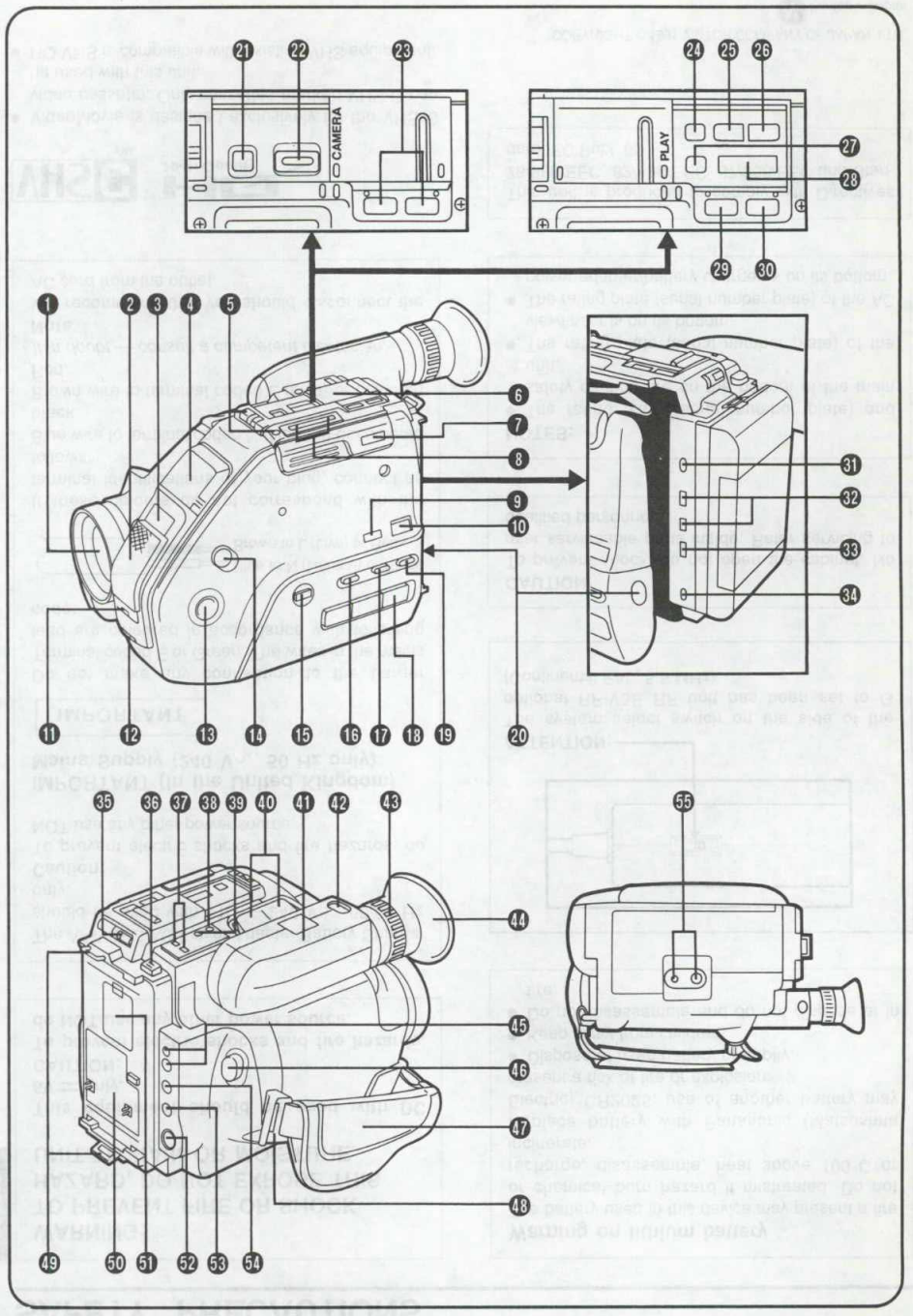
- Ultra-compact, ultra-lightweight
- Snap-on DC video light
- Full Range AF system with Auto Macro
- F1.4, 8x power zoom lens
- 3-Lux low-light sensitivity (with Gain-Up)
- Flying erase head
- Multiple-speed shutter with 1/4000-sec.
- Digital Superimpose (8 colours, nega/posi)
- Cinema mode facility
- Encore playback
- Digital Tracking
- Age insertion



This VideoMovie is designed to be used with PAL-type colour television signals. It cannot be used for playback with a television of a different standard. However, live recording and viewfinder playback are possible anywhere. Use the BN-V14U/BN-V22U battery packs and, to recharge them, the provided multi-voltage AC power adapter/battery charger. (An appropriate conversion adapter may be necessary to accommodate different designs of AC outlets in different countries.)

CONTENTS

Safety precautions 1
Major features 2
Controls and connectors 3
Viewfinder indications 4
Power supply system 5
Basic preparations 7
Loading and unloading a cassette 7
Date/time/birthday setting 8
Recording operation 9
Warnings 12
Advanced videography techniques 13
Playback 19
Using the cassette adapter 21
Connections to a television for playback 21
Editing techniques 23
Using accessories 25
Using the remote control unit RM-V50U/RM-V20U (optional) 27
Special recording functions via the optional RM-V50U/RM-V20U 28
Systems flexibility 31
Supplemental information 32
Cautions 33
Video cassettes 34
In case of difficulty 35
Specifications 36



www.freeservicemanuals.info
Free service manuals
Gratis schema's
Digitized by
www.freeservicemanuals.info

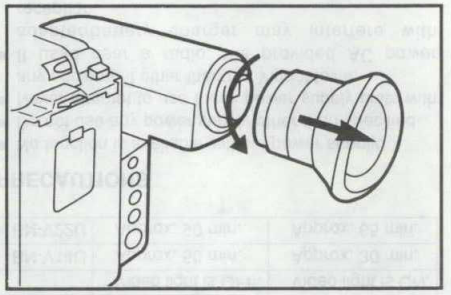
Published in Heiloo, Holland.
www.freeservicemanuals.info
3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

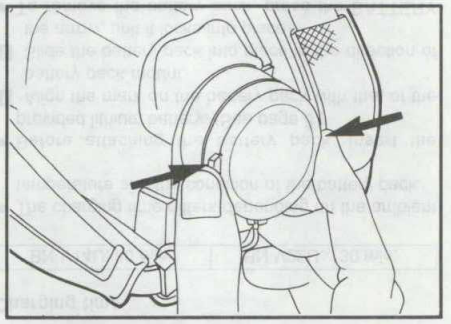
CONTROLS AND CONNECTORS

ENGLISH

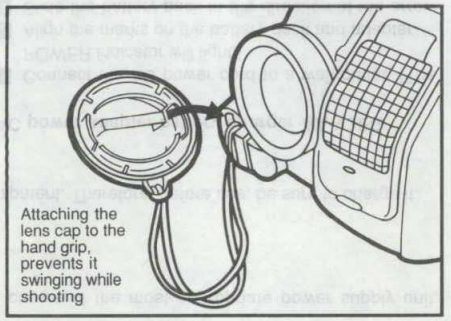
No.		Page
❶	8:1 zoom lens	
❷	Microphone	
❸	White balance sensor window	
❹	Light shoe cover	25
❺	POWER switch with LED indicator	9
❻	Control panel cover	9
❼	FADER button	16
❽	MANUAL FOCUS (FAR/NEAR) buttons	14
❾	DISPLAY MODE button	11
❿	DISPLAY on/off button	11
⓫	Tally lamp	10
⓬	WIND FILTER switch	10
⓭	FULL AUTO button	14
⓮	GAIN UP button	14
⓯	SHUTTER button	15
⓰	Title MEMORY button	17
⓱	Title COLOR button	17
⓲	CLOSE button	7
⓳	IMAGE REVERSE/CINEMA button	17
⓴	TITLE button	17
㉑	Q.REVIEW button	10
㉒	FOCUS manual/auto select button	14
㉓	RETAKE button	11
㉔	EDIT button	23
㉕	STOP button	19
㉖	PAUSE button	19
㉗	ENCORE button	20
㉘	PLAY button	19
㉙	REW button	19
㉚	FF button	19
㉛	TAPE LENGTH select switch	10
㉜	DATE/TIME ADJ. SET buttons	8
㉝	DATE/TIME ADJ. SELECT button	8
㉞	Trigger ALARM ON/OFF switch	10
㉟	EJECT switch	7
㊱	BATTERY RELEASE button	5
㊲	TRACKING (–/+) buttons	20
㊳	COUNTER MEMORY button	20
㊴	COUNTER RESET button	20
㊵	Power zoom buttons	14
㊶	Electronic viewfinder	7
㊷	Second recording start/stop button (SUB TRIGGER)	9
㊸	Dioptric adjustment control	7
㊹	Eyepiece	
㊺	External MIC jack	26
㊻	Recording Start/Stop button	9
㊼	Grip strap	7
㊽	Thumb rest	
㊾	Eyelets for shoulder strap	26
㊿	Battery pack mount	5
(51)	Clock battery compartment	8
(52)	AV OUT connector	21
(53)	REMOTE jack	26
(54)	PHONE (earphone) jack	
(55)	Tripod mounting socket	26



Cleaning the eyepiece
The viewfinder eyepiece can be removed for cleaning. Turn the eyepiece counterclockwise and pull it out.



Remove/reattach the lens cap
Remove or reattach the lens cap by pressing the tabs on either side of the lens cap.



Attaching the lens cap to the hand grip, prevents it swinging while shooting

VIEWFINDER INDICATIONS

ENGLISH

Title colour
BLACK → WHITE → YELLOW → CYAN → GREEN → PURPLE → RED → BLUE → BLACK

Focus indicator
: Manual Focus mode .
: Low contrast during Auto Focus mode.

Fade indicator
FADER: Fade function engaged.

Gain up
GAIN UP: Gain-Up mode.

Operation mode
REC : Recording is being performed.
— : Record-Standby mode.
PAUSE : Record-Pause mode.
CASSETTE : No cassette or a cassette without its safety tab is loaded.

Shutter speed indicator

Condensation warning

S4000
GAIN UP
BLACK
CLOCK
BATT.
FADER
PAUSE
DEW
REC
45MIN
M8888
25.12.91
23:59
6Y11M

Remaining tape time

Title colour
M: Counter memory

Head clog warning

Auto-focus detection zone

Low-battery warning

Clock battery warning

Date
Day/Month/Year
DATE: Date setting is performed.

Time
24-hour indications.
TIME: Time setting is performed.
AUTO DATE: Auto Date Record engaged.

Age
BIRTHDAY: Age setting is performed.

ON-SCREEN DISPLAY

The viewfinder indications can also be displayed on the screen of a monitor connected to the VideoMovie.

- Connect the VideoMovie to a video monitor. Press DISPLAY MODE button to select the On-Screen Display mode. The viewfinder indications appear on the monitor screen. (See page 11.)
- The on-screen display is available in the Rehearsal or Record-Pause mode.

Published in Heiloo, Holland.
www.freeservicemanuals.info
3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

POWER SUPPLY SYSTEM

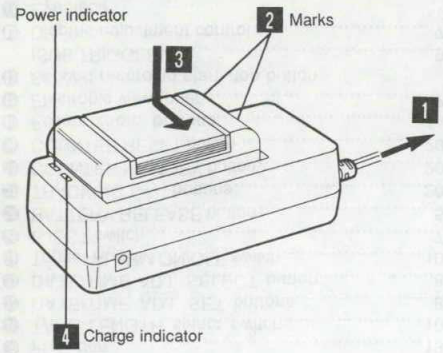
ENGLISH

The convenient 3-way power supply system gives you a choice of the most appropriate power supply unit, depending on the application.

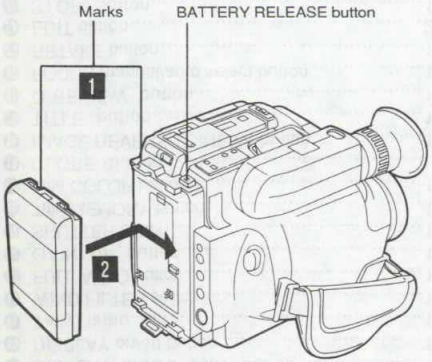
WITH BATTERY PACK

The battery pack has been kept in the uncharged state for shipment. Therefore, before use, be sure to charge it.

Charging procedure



Attaching the battery pack



AC power adapter/battery charger AA-V3EG

1. Connect the AC power cord to a wall outlet. (The POWER indicator will light.)
2. Align the marks on the battery pack and adapter.
3. Slide the battery pack in the direction of the arrow until it locks in place.
4. When charging is completed, the CHARGE indicator that is red turns green.

Charging time

BN-V14U: 80 min.	BN-V22U: 130 min.

- The charging time differs depending on the ambient temperature and the condition of the battery pack.
- Before attaching the battery pack, insert the provided lithium battery. (See page 8.)

1. Align the mark on the battery pack with that of the battery pack mount.
2. Slide the battery pack into place in the direction of the arrow, unit it locks into place.

- To remove the battery pack, press the BATTERY RELEASE button and slide out the battery.

Recording time

	Video light is OFF.	Video light is ON.
BN-V14U	Approx. 50 min.	Approx. 30 min.
BN-V22U	Approx. 90 min.	Approx. 65 min.

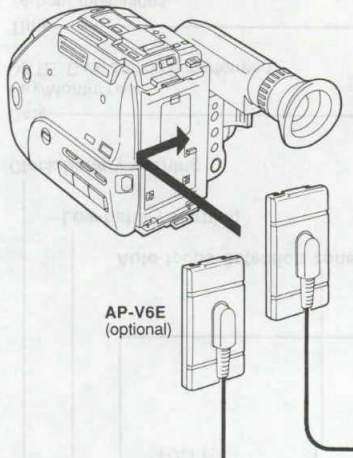
PRECAUTIONS

- No function is available without power supply.
- Do not use any power supply other than specified.
- Never attempt to use these power supply units with any equipment other than the VideoMovie.
- If used near a radio, the provided AC power adapter/battery charger may interfere with reception.
- The recording time per charge is influenced by the duration of recording standby, frequency of zooming, etc. It is safer to have spare battery packs.

Published in Heiloo, Holland.

www.freeservicemanuals.info

ENGLISH



WITH AC POWER

Use the provided AA-V3EG AC Power Adapter/Battery Charger.

Note:

This unit can be used with 110 V to 240 V power supplies. Selection is automatic and no adjustment is required.

IN A CAR

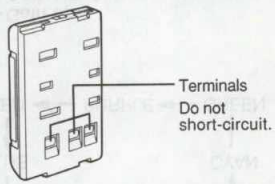
Use the optional AP-V6E Car Battery Cord.

- Leave the car's engine idling when using the car battery. (For use with 12 V negative-grounded cars only.)

A WORD ON THE EXCLUSIVE BN-V14U/V22U BATTERY PACKS

The BN-V14U/V22U are nickel-cadmium batteries. Be sure to carefully read the caution attached to the battery pack.

- Recharging a battery pack that has not become completely discharged results in deterioration of its capacity. Recharge it after its power is completely used. (Recharging of the battery pack is recommended when the low-battery warning appears in the viewfinder.)



Temperature ranges:

The recharging time is based on room temperature of 20°C.
The lower the temperature, the longer the recharging time.

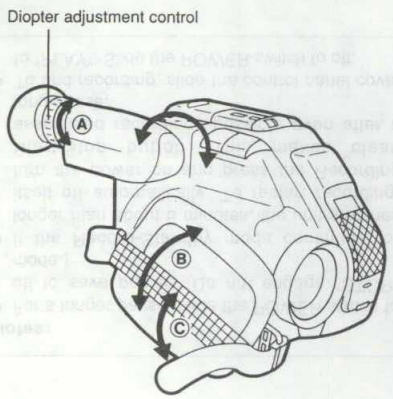
For charging:	10°C to 35°C
For operating:	0°C to 40°C
For storing:	–10°C to 30°C

3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

www.freeservicemanuals.info

BASIC PREPARATIONS



POSITIONING THE VIEWFINDER

The viewfinder can be positioned for best viewability.

DIOPTER ADJUSTMENT

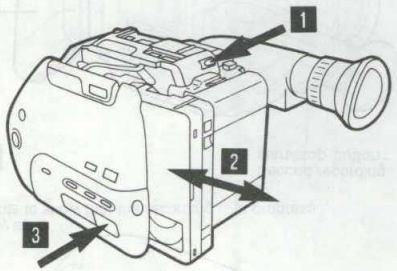
The viewfinder lens can be adjusted to suit the operator's eyesight by turning the diopter adjustment control (Ⓐ).

- First supply power, and engage the Rehearsal or Record-Pause mode.

ADJUSTING THE GRIP STRAP

1. Separate the Velcro strip to expand the loop (Ⓑ Ⓒ).
2. Pass your right hand through the loop and grasp the grip. Adjust the length of the strap to suit your hand size and refasten the Velcro strip.

LOADING AND UNLOADING A CASSETTE



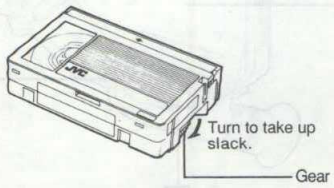
LOADING

1. Open the cassette holder by pressing the EJECT switch.
2. Insert the cassette with its label facing outward.
3. Close and lock the cassette holder by pressing the CLOSE button.

UNLOADING

1. Press the EJECT switch. The cassette holder will open.
2. Remove the cassette.
3. Close and lock the cassette holder by pressing the CLOSE button.

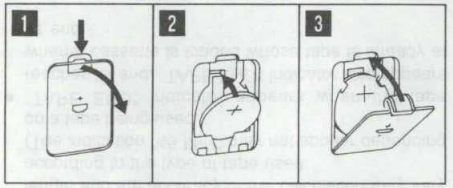
Notes:



- Ensure that tape is not slack inside the cassette, then load the cassette correctly.
- Do not repeat loading and unloading of the cassette without running the tape, as this will slacken the tape, causing tape damage.
- The cassette holder can be opened even when the power is off.

Published in Heiloo, Holland.

DATE/TIME/BIRTHDAY SETTING



Note:

- Replace battery with Panasonic (Matsushita type) CR2025 only. Use of another battery may present risk of fire and explosion.

Warning on lithium battery

- Dispose of used battery promptly
- Keep away from children
- Do not disassemble and do not dispose of in fire.

LITHIUM BATTERY

The provided lithium battery powers the clock operation and date/time/age insertion function.

Battery insertion

1. Open the clock battery compartment cover on the rear of the VideoMovie.
2. Insert the provided lithium battery with the plus (+) side up.
3. Close the cover on the unit until it clicks.

Battery replacement

The battery lasts for about one year. When the clock battery warning (CLOCK) appears in the viewfinder, this battery needs to be replaced.

SETTING DATE/TIME/BIRTHDAY

Before adjusting the date, time and birthday for the first time or after replacing the batteries.

1. Set the control panel cover to "CAMERA".
2. Switch the unit's power on. Then, slide the EJECT switch to open the cassette holder.
3. Press the DATE/TIME ADJ. SELECT button—the day blinks.
4. Press the DATE/TIME ADJ. SET button to choose the correct day.
5. Press the DATE/TIME ADJ. SELECT button to select the next item to change, with the item selected changing in the sequence below:
   If the DATE/TIME ADJ. SELECT button is kept pressed for more than 1.5 seconds, this will call up items rapidly for setting, and stop at the item where the button is released.
6. Procedures in steps 3 and 4 allow you to set Date and Time. After the Time has been set proceed to the Birthday setting.

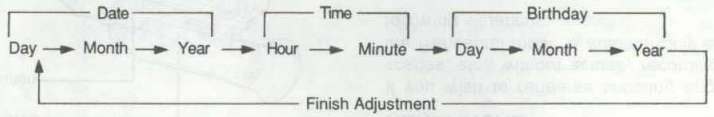
Setting the "Birthday"

The VideoMovie is provided with a "Birthday" memory function so that once someone's date of birth is entered in memory, the unit displays and records his or her age, automatically calculated and expressed in on the scenes.

7. Make the settings for the items of BIRTHDAY as described in steps 3 and 4.
8. After all items have been set, press the DATE/TIME ADJ. SELECT button, and blinking will stop. The Date, Time and Age will be displayed.

Notes:

- The clock begins timekeeping when the minute portion stops blinking and remains constantly lit. While the Date and Time are blinking, the clock does not keep time. Be sure to confirm the correct time when setting the Birthday.
- Age-indication appears as follows:
  Under one-month-old.....31D
  Under one-year-old.....11M
  Under 7-year-old 6Y11M
  7 and over 7-year-old 99Y

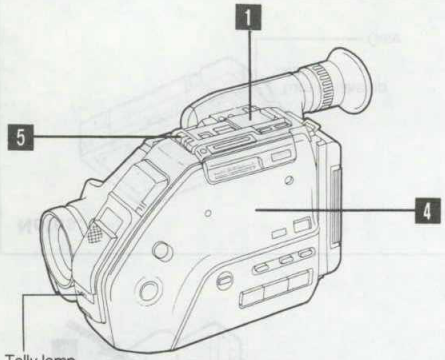


3/13/16

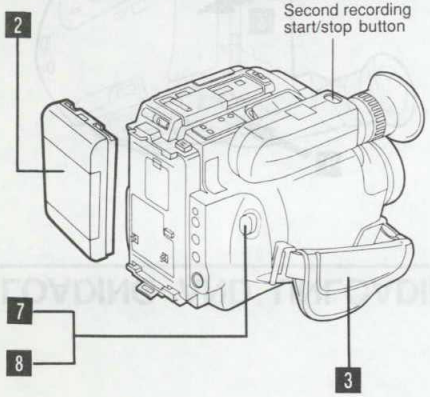
Digitized by WWW.FREESERVICEMANUALS.INFO

RECORDING OPERATION

ENGLISH



Tally lamp
Lights to show that the recording is in progress.

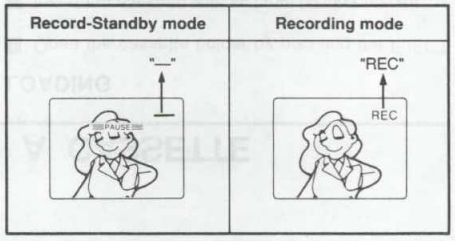


Notes:
- For a longer pause, slide the POWER switch to off to save power. (Do not engage "STOP" mode.)
- If the Record-Standby mode continues for longer than about 5 minutes, the unit switches itself off automatically. To restart recording, turn the power on and press the Recording Start/Stop button. This makes clean assembled recordings possible even after a long pause.
- To end recording, slide the control panel cover to "PLAY". Slide the POWER switch to off.

1. Set the control panel cover to "CAMERA".
2. Supply power. (Battery pack or AC power adapter or car battery cord. See pages 5 and 6.)
3. Adjust the grip strap. See page 7.
4. Insert a video cassette correctly. See page 7.
5. Slide the POWER switch to turn power on. The unit enters the Record-Standby mode. (The aimed-at scene will appear on the viewfinder screen.)
6. Determine the composition by referring to the viewfinder image.
7. Press the Recording Start/Stop button. The recording mode indication will appear and the recording starts.
   - During recording, the tally lamp lights continuously.
8. To stop recording temporarily, press the Recording Start/Stop button once again.
   - To restart recording, press the Recording Start/Stop button.
   - Repeating steps 7 and 8 produces assemble recordings.

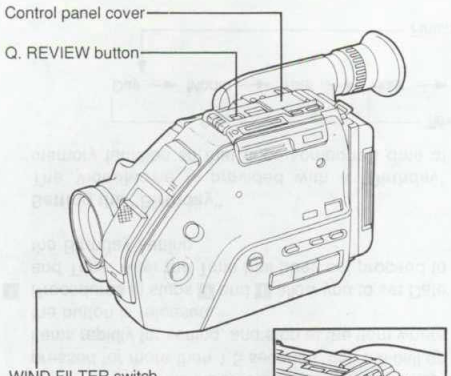
Viewfinder indications

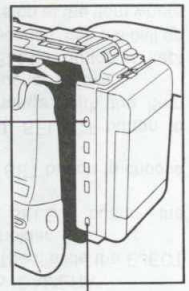
Record-Standby mode	Recording mode
"—"	"REC"

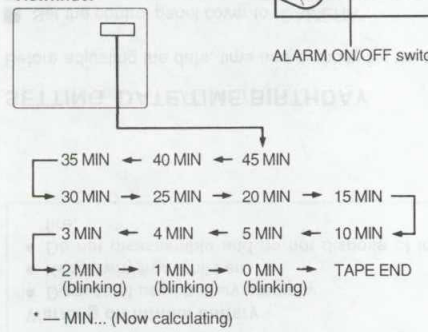


Second recording start/stop button
(SUB TRIGGER) — for low-angle shots

When you shoot scenes from a low angle, use the second recording start/stop button for better viewability and securer positioning of the camera.






Viewfinder
35 MIN ← 40 MIN ← 45 MIN
30 MIN → 25 MIN → 20 MIN → 15 MIN
3 MIN ← 4 MIN ← 5 MIN ← 10 MIN
2 MIN (blinking) → 1 MIN (blinking) → 0 MIN (blinking) → TAPE END

* — MIN... (Now calculating)

Notes:
- The indication will start blinking when the remaining tape time reaches 2 minutes.
- The indicated remaining time is approximate.
- The time required to calculate the remaining tape length and the accuracy of the calculation may vary according to the type of tape used.
  (The indication "45 MIN" may not appear depending on a tape being used.)
- "TAPE END" indicator appears when the tape reaches its end. "TAPE END" indicator also appears when a cassette is loaded whose tape is already at its end.

REHEARSAL

If you wish to rehearse shooting angles, compose scenes, etc., without actually recording on the tape, the Rehearsal mode is automatically engaged in the following situations:

The Control panel cover is set to the "CAMERA" position.
= No cassette is loaded.
= A cassette without its safety tab is loaded.
- Rehearsal is not engaged when the control cover is set to the "PLAY" position.
- The power save circuit does not function during rehearsal. (For power save function, see page 12.)

TRIGGER ALARM

When the ALARM ON/OFF switch is set to ON, an electronic alarm beeps when the Recording Start/Stop button is pressed to begin recording.
The electronic alarm beeps twice when the Recording Start/Stop button is pressed for record pause. This alarm helps prevent recording errors.

WIND FILTER switch

Reduces the windy noise with this switch is set to ON.

QUICK REVIEW

- If you want to review the end of the last recording for confirmation, press the Q.REVIEW button from the Record-Standby mode; the tape will be rewound for about 2 seconds of program time and played back automatically for this section, after which it will stop in the Record-Standby mode for the next shot.

Note:
- Distortion might occur when playback starts. This is normal.

REMAINING TAPE TIME INDICATION

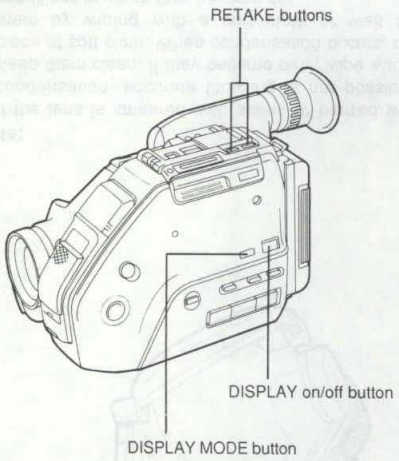
The remaining tape time is displayed in the viewfinder as shown.
- Set the TAPE LENGTH select switch according to the tape used.
  EC-30: When using a tape with 30-minute recording time (EC-30 type) or less.
  EC-45: When using a tape with 45 minute recording time (EC-45 type)

Published in Heiloo, Holland.

www.freeservicemanuals.info

3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO



RETAKE

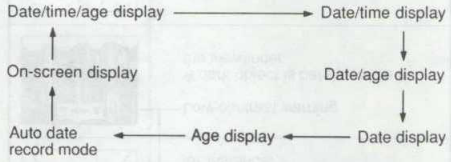
After viewing a recorded segment, you may decide to re-record it immediately. The Retake function is convenient for this.

1. Make sure the VideoMovie is in the Recording-Standby mode. (If not, engage the mode.)
2. Press either RETAKE button to reach the point where you wish a new recording to start. When the RETAKE button is released, the camera will enter the Record-Standby mode again.
3. Press the Recording Start/Stop button to start recording.

Note:
Noise may appear during Retake. This is normal.

DATE/TIME/AGE RECORDING

The date/time/age can be displayed and recorded according to the selected mode. Press the DISPLAY MODE button to cycle through the modes in the following order:



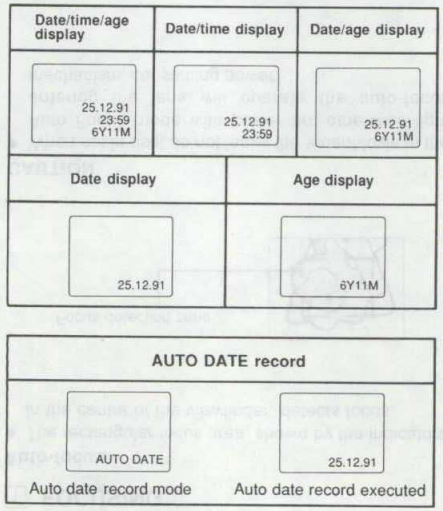
AUTO DATE-RECORD FUNCTION

This function allows the date (month, day and year) to be automatically recorded for about 5 seconds following the first operation of the Recording Start/Stop button:

= after changing the date.
= after a cassette is loaded, or
= after "AUTO DATE" mode is selected by the DISPLAY MODE button.

- The viewfinder indication shows the date during initial 5 seconds, then changes to "AUTO DATE".
- Auto date record reserve indication will cease to be displayed, if the DISPLAY on/off button is set to OFF.

Date/time recording indications



ASSEMBLE RECORDING TECHNIQUES

1 To replace the battery pack during recording

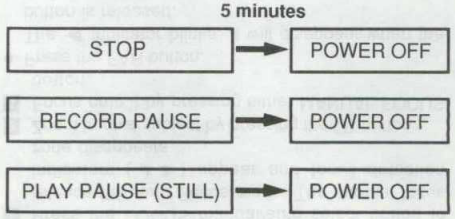
1. If the battery warning appears in the viewfinder while recording, stop recording by setting the POWER switch to OFF, not the STOP button.
2. Replace the battery pack with a charged one.
3. Set the POWER switch to ON.
   - The unit will be in the Record-Standby mode.
4. Press the Recording Start/Stop button to start recording.

2 To record onto a partially recorded tape

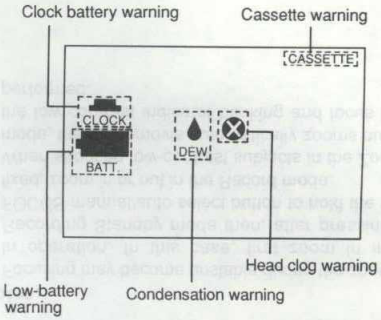
1. Play back the tape to a point where you wish a new recording to start.
   - Use the REW or FF button for faster location.
2. Press the PAUSE button at the located point.
   - The unit will enter the Still mode.
3. Slide the control panel cover to "CAMERA".
4. Press the Recording Start/Stop button to start recording.

POWER SAVE AND TAPE PROTECTION CIRCUIT

- To save power, the VideoMovie switches itself off automatically in the following situations:
  (1) When left for longer than 5 minutes in the Stop mode.
  (2) When left for longer than 5 minutes in the Record-Standby (Record-Pause) mode.
- To protect the tape, the VideoMovie (regardless of whether battery-operated or AC-powered) releases tape tension slightly and switches itself off automatically if left for longer than 5 minutes in the Record-Standby (Record-Pause) mode.
- For the same reason, the VideoMovie enters the Stop mode if left for longer than 5 minutes in the Still (Play-Pause) mode.



WARNINGS



BATTERY WARNING

- When the battery power is coming to an end, a battery warning indication appears in the viewfinder. Replace the battery pack with a fully charged one.
- After indication appears, the power turns off automatically. In this state, however, sliding the EJECT switch turns the power on and ejects the cassette.

CLOCK BATTERY WARNING

- Blinks when the lithium battery is not in place or exhausted. In this condition, no date/time function is available.

CONDENSATION WARNING

- Appears when the excessive moisture condensation occurs inside the unit.

CASSETTE WARNING

- Blinks to warn that no cassette or a cassette without safety tab is loaded.

HEAD CLOG WARNING

- Appears when video head clogging occurs. Proceed as follows.

1. Stop recording and slide the control panel cover to the "PLAY" position, then press the REW button or FF button to unload the tape. Then return the cover to the "CAMERA" position to reload the tape.
2. Use the RETAKE buttons to locate the end of the previsouly recorded section.
3. Press the Recording Start/Stop button to resume recording.

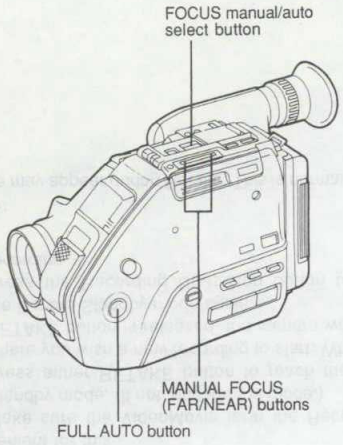
Note:

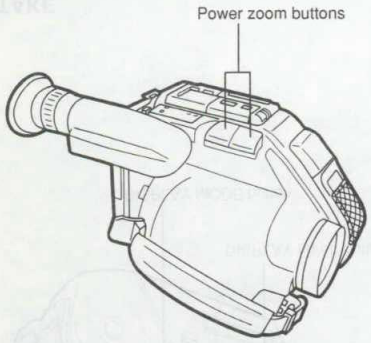
- The VideoMovie incorporates an automatic head cleaning function which operates each time the cassette is loaded and unloaded. However, even after this operation, if the head clog warning indication does not go off, try it a few more times. If the indication still remains displayed, consult your nearest JVC Dealer.

Published in Heiloo, Holland.
www.freeservicemanuals.info
3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

ADVANCED VIDEOGRAPHY TECHNIQUES





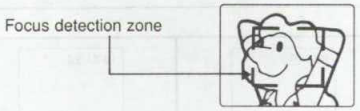
Note:

- If the lens is smeared with stains or blurred with condensation, accurate focusing is not possible. Keep them clean. If they become dirty, wipe with a piece of soft cloth. When condensation occurs, dry them by wiping with a soft cloth or wait for conditions in which they become dry.

1 FOCUSING

Auto-focus

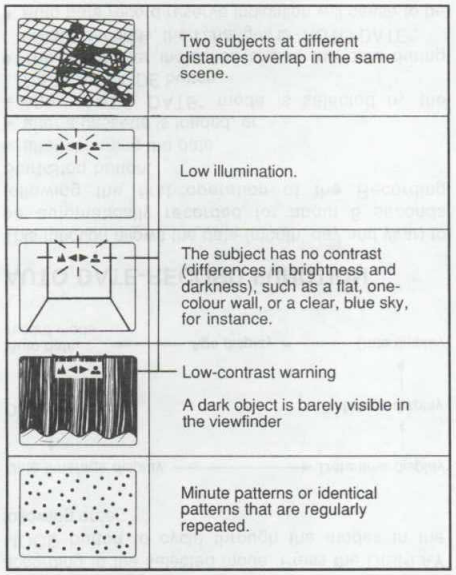
- The rectangular focus area, shown by the indicators in the centre of the viewfinder, detects focus.



CAUTION

- When not in use, do not leave the VideoMovie in the Auto Focus mode with power on; otherwise light entering the lens will operate the auto-focus mechanism, consuming power.

- Correct focus may not be obtained in the following situations. In such case manual focusing should be performed to obtain proper focus.


Two subjects at different distances overlap in the same scene.
Low illumination.
The subject has no contrast (differences in brightness and darkness), such as a flat, one-colour wall, or a clear, blue sky, for instance.
Low-contrast warning
A dark object is barely visible in the viewfinder
Minute patterns or identical patterns that are regularly repeated.

Manual focus

For manual focus operation, proceed as follows:

1. Press the FOCUS manual/auto select button to release the Auto Focus mode. The manual focus indicators (▲ ▲) appear and focus detection zone disappears.
2. Zoom in on a subject by pressing the "T" button.
3. Focus onto it by pressing either MANUAL FOCUS button.
   - Press the FAR button.
     The ◄ indicator blinks. It will disappear when the button is released.
   - Press the NEAR button.
     The ► indicator blinks. It will disappear when the button is released.
   - When the focus level cannot be adjusted any farther or closer, the indicator (▲) or the indicator (▲) will blinks.
4. Determine the composition by pressing the "W" button.

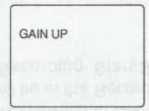
Notes:

- To release the Manual Focus mode (to engage the Auto Focus mode), press the FOCUS manual/auto select button or FULL AUTO button. The manual focus indicators (▲ ▲) disappear and focus detection zone appears.
- When you use the Manual Focus mode, be sure to focus the lens in the maximum telephoto position. If you focus in on a certain subject in the wide-angle position, sharply-focused images cannot be obtained when zoomed up because the depth- of-field is reduced at longer focal lengths.

2 GAIN-UP

If lighting is or becomes insufficient while shooting, use the Gain-Up function to record dim scenes brighter.

1. Press the GAIN UP button, the Gain-Up mode is engaged and "GAIN UP" appears in the viewfinder.



2. To release the mode, press the GAIN UP button again.
   - Pressing the FULL AUTO button also releases the Gain-Up mode.

Notes:

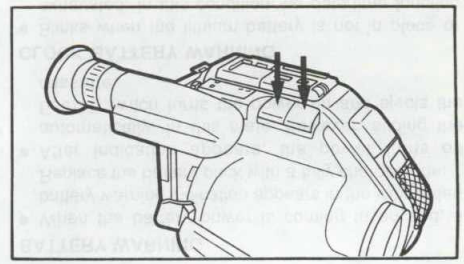
- The scene recorded using the Gain-Up function looks grainy.
- The Gain-Up function is generally not effective when shooting in bright places.

3 ZOOMING

When the focal length of the lens is varied by pressing the power zoom buttons, the image appears to come nearer to or retreat from the viewer.

Procedure

- Press "T" for zooming in and "W" for zooming out.



Notes:

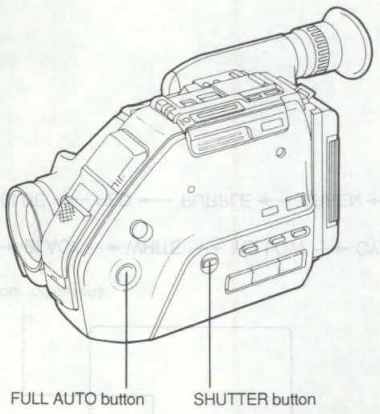
- Focusing may become unstable during the zooming-in operation. In this case, first zoom in in the Recording Standby mode then, after pressing the FOCUS manual/auto select button to hold the focus fixed, zoom in or out in the Record mode.
- When shooting low-contrast subjects in the Zoom-in mode, the Videomovie automatically zooms out with the low contrast indicator blinking and focus being performed.

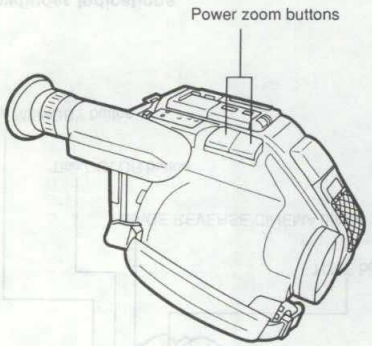
Published in Heiloo, Holland.

www.freeservicemanuals.info

3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO





4 MACRO SHOT

The VideoMovie's Full Range AF system can offer continuous shooting ability from close-up to infinity.

Procedure for Macro shooting

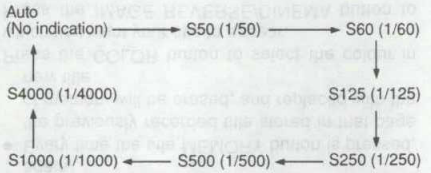
1. Press the "W" power zoom button until the lens zooms out completely.
2. Position the subject in auto-focus detection zone.

- For best results, increase illumination when shooting in the Macro mode.

5 MULTIPLE-SPEED ELECTRONIC SHUTTER

The VideoMovie is equipped with a selectable high-speed shutter that allows better recording of quick movements for sharp, clear stills or slow-motion playback.
Select it when taping fast-action shots that you will want to play back later on a VCR equipped with the Still or Slow-motion mode.

1. Press the SHUTTER button to switch to the desired electronic shutter speed. This can be done while Recording or in any other mode. It continues at the selected speed until switched to another speed.
2. Select the shutter speed among 1/4000, 1/1000, 1/500, 1/250, 1/125, 1/60, 1/50 second and Auto mode by pressing the shutter speed changes in the following order:



- When selected, the High-Speed Shutter mode is indicated on the viewfinder screen.
- In the Auto mode, usually the shutter speed is set to 1/50 sec., but changes to 1/60 sec., whenever flickering, caused by light sources such as fluorescent lights, is detected.

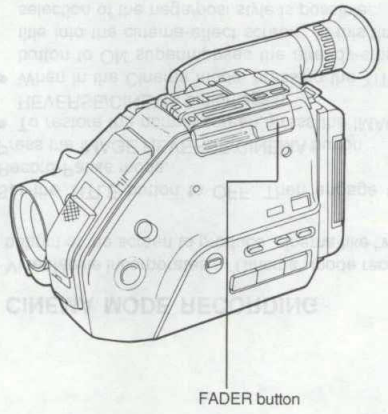
3. When finished recording the fast-action scene, switch back to the Auto mode by pressing the SHUTTER button until the SHUTTER indicator in the viewfinder disappears.

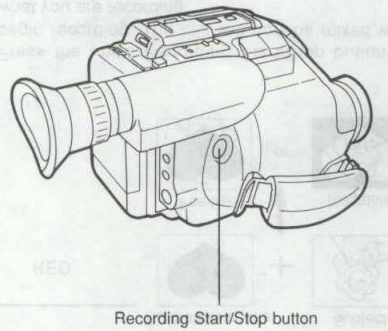
Notes:

- The High-Speed Shutter mode requires slightly more subject illumination than the Standard Shutter mode. If so, switch to the Auto mode.
- Picture colour may be adversely affected in the High-Speed Shutter mode when the subject is lit by alternating discharge-type light sources such as fluorescent or mercury-vapour lights.
- When playing back a section recorded in the High-Speed Shutter mode, movement of subjects in the picture may not be smooth. This is not due to any defect of the unit.
- Pressing the FULL AUTO button also restores the shutter speed to the Auto mode.

6 FADER

The VideoMovie incorporates a fader function which allows smooth video/audio fade-in and fade-out with a black blank screen. The fader is simultaneously activated with the Recording Start/Stop button operation.





FADE-IN

1. Aim the VideoMovie to the subject in the Record-Standby mode.
2. Press the FADER button to engage the Fade-Standby mode. "FADER" appears on the viewfinder screen.

3. Press the Recording Start/Stop button. The screen immediately becomes blank and recording begins. Fade-in starts at the moment the Recording Start/Stop button released. "FADER" in the viewfinder blinks until the fade-in is completed. If the button is not released, the screen will remain blank and be recorded (with no audio) as long as the button is kept pressed.

FADE-OUT

1. Start shooting as usual.
2. Press the FADER button to engage the Fade-Standby mode. "FADER" appears on the viewfinder screen.
3. Press the Recording Start/Stop button. The viewfinder indications start blinking. Fade-out starts and will be completed in about 4 seconds. When completed, the VideoMovie enters in the Record-Standby mode automatically. At this time, if the button is not released, the screen will remain blank and be recorded as long as the button is kept pressed.

Note:

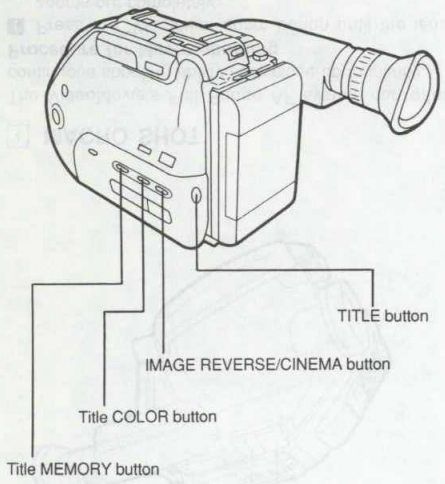
- Viewfinder indication "FADER" is not recorded.

Published in Heiloo, Holland.
www.freeservicemanuals.info
3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

7 DIGITAL SUPERIMPOSE

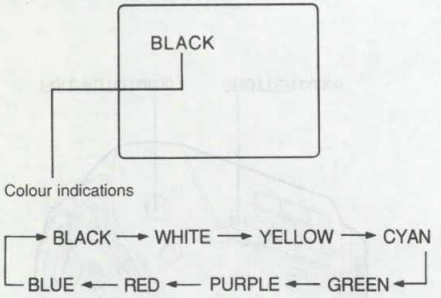
The VideoMovie's Digital Superimpose function allows a title to be superimposed on a recording in a choice of 8 colours and either positive or negative (reversed) style for more creative video opportunity.



STORING A TITLE

1. Put the VideoMovie into the Record-Pause or Rehearsal mode.
   - When the " CLOCK " indication (clock battery warning) appears in the viewfinder, titles cannot be stored. Insert the lithium battery, or replace the inserted one with a new one according to the instructions on page 8.
2. Press the TITLE button.
3. Aim the lens at your title in as well-lit a location as possible.
   - If, at this point, the stripes or an old title appearing in the viewfinder prove bothersome, press the TITLE button to turn it off.
   - When storing a title, the scene visible in the viewfinder may differ slightly from that which will be recorded on the tape.
4. Press the title MEMORY button for about 1 second to store the title.
   - When a title is stored poorly, check to see that the lighting is adequate and that the title is drawn with bold strokes, then shoot the title again.
   - Every time the title MEMORY button is pressed, the previously recorded title stored in that page of memory will be erased, and replaced with the new title.
5. Press the COLOR button to select the colour in which you want your title to appear.
6. Press the IMAGE REVERSE/CINEMA button to choose negative or positive style.
   - The title MEMORY button works in both the Record-Pause and Rehearsal modes; care should be exercised not to press title MEMORY accidently as this will erase stored titles.

Viewfinder Indications



Creating titles

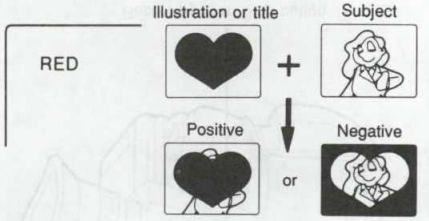
Make note of the following guidelines to assure best results.

1. Create titles using dark colours on light backgrounds—black writing on white paper, for example.
2. Letters should be drawn with broad strokes.

SUPERIMPOSING A TITLE

① Mixing a title at the beginning of a recording

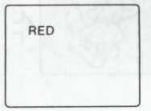
1. Put the VideoMovie into the Record-Pause mode.
2. Press the TITLE button to display your title on the viewfinder screen.
3. Confirm the colour, and the positive/negative style. Colour choice and positive/negative style can be changed at this point. Press the COLOR button to select a different colour, and the IMAGE REVERSE/CINEMA button to choose positive/negative style.



4. Press the unit's Recording Start/Stop button to begin recording. The title will now be mixed with what you are recording.
   Press the TITLE button when you wish to end the titled portion of your recording.

② Inserting a title in the middle of a recording

1. Confirm the colour, and positive/negative style of your title.
   Press the TITLE button to turn it off.



2. Shoot your live scene by pressing the Recording Start/Stop button.
   Press the TITLE button when you wish to insert your title. It will be inserted into your ongoing recording at exactly that point.
3. Press the TITLE button again to stop inserting your title with the action you are recording.

Notes:

- With title off, press the COLOR button to check the colour for about 3 seconds. The colour can be changed.
- Positive/negative selections can be changed when the title is displayed in the viewfinder.
- The "Colour" indication displayed in the viewfinder will not be recorded on the tape.
- When the lithium battery for the unit's clock is exhausted, the stored title will be lost.

8 CINEMA MODE RECORDING

The VideoMovie incorporates a "Cinema" mode recording function which allows you to record black bars at the top and bottom of the screen to produce cinema-like "wide-screen" effects.

1. Set the TITLE button to OFF. Then engage the Record-Pause mode.
2. Press the IMAGE REVERSE/CINEMA button.
   - To restore the normal screen, press the IMAGE REVERSE/CINEMA button again.
   - When in the Cinema mode, pressing the TITLE button to ON superimposes the already-stored title into the cinema-effect screen. At this time, selection of the nega/posi style is possible.

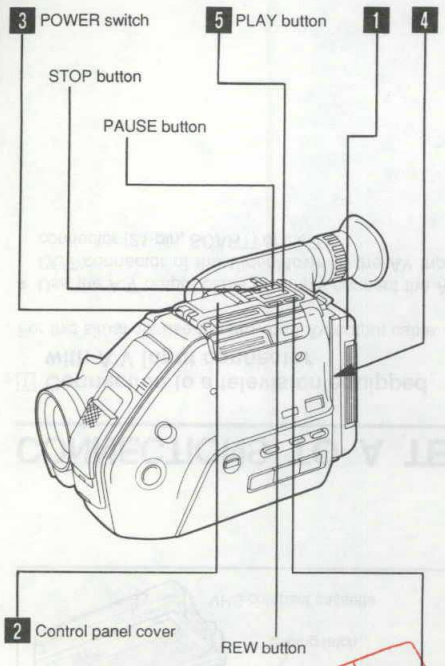
Notes:

- The Cinema mode can be engaged only in the Record-Pause, Record or Rehearsal mode.
- When the title is displayed (with the TITLE button set to ON), engaging the Cinema mode is not possible.

Published in Heiloo, Holland.
www.freeservicemanuals.info
3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

PLAYBACK



The VideoMovie permits playback of recorded "VHS-C" video cassettes.
For connections refer to pages 21 and 22.

Preparations

- With a television equipped with audio/video input connectors, engage the Video (or AV) mode of the television.
- With a regular television, set the antenna select switch of the RF-V3E RF unit to VIDEO and the television's channel selector to your video channel (specified AV channel).

1 Supply power. (Battery or AC operation: see pages 5 and 6.)
2 Slide the control panel cover to "PLAY".
3 Slide the POWER switch to turn power on.
4 Insert a pre-recorded VHS-C cassette.
- Ensure that tape is not slack inside the cassette, then load the cassette correctly. See page 34.

5 Press PLAY button. Playback will start.
- To stop playback, press the STOP button.

STILL PLAYBACK

Press the PAUSE button during playback. The picture will stop on the screen.
- After about 5 minutes of still playback, the VideoMovie enters the Stop mode automatically for tape protection and switches itself off.

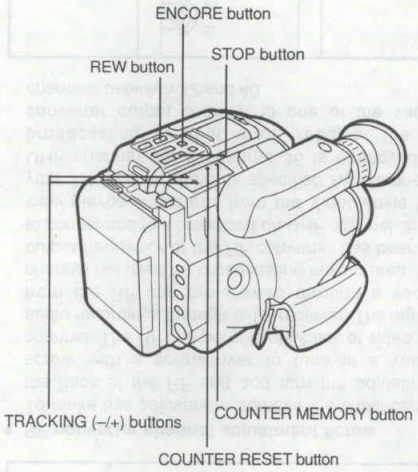
SHUTTLE SEARCH

- **Fast-speed playback in the forward direction:** Press the FF button in the Play mode. Playback will be speeded up to 3 times normal speed.
- **Fast-speed reverse playback:** Press the REW button in the play mode. The tape will be played back in the reverse direction at 3 times normal speed.

Notes:

- For brief fast-speed searching, keep the FF or REW button pressed for more than 2 seconds; when you release the button, the Search mode will be cancelled.
- Noise bars will appear and pictures may become monochrome while in these modes. This is not due to any defect of the unit.

www.freeservicemanuals.info Digitized by Free servicemanuals Gratis scanning



DIGITAL TRACKING

Digital Tracking adjustment is performed automatically to obtain optimum pictures during playback. Adjust the tracking manually when noise bars appear on the screen.

MANUAL TRACKING

Manual tracking might be more effective, depending on video cassette being used.

1 Press both TRACKING (–/+) buttons simultaneously for switching to cancel the Auto Tracking mode and enter the Manual Tracking mode.
2 Adjust to the best picture possible by pressing either TRACKING (–/+) button.

Notes:

- When re-engaging the Auto Tracking mode, press both TRACKING (–/+) buttons.
- For tapes recorded on another deck, tracking adjustment might not be effective.

TRACKING ALARM FUNCTION

- Beeps when the Auto mode is switched to the Manual mode.
- Beeps when adjusting the tracking level in the Manual Tracking mode. While keeping the TRACKING button pressed, beeping continues as the level of tracking changes, and beeping stops when the end of the tracking level is reached.

COUNTER MEMORY FUNCTION

The VideoMovie incorporates a counter memory function which facilitates locating a specific tape segment.

1 Press the COUNTER RESET button to reset the counter to "0000".
2 Press the COUNTER MEMORY button. The "M" mark will appear.
3 After recording or playback, press the STOP button, then the REW button. The tape will automatically stop at the counter reading of around "0000".
4 Press the PLAY button to start playback.

Notes:

- The counter memory function is effective in the Fast Forward mode as well.
- To cancel the memory function, press the COUNTER MEMORY button.
- When the power supply unit is disconnected, the counter memory function is instantly cancelled.

ENCORE PLAYBACK

The Encore function allows instant replay of a scene.
- Press the ENCORE button during playback. The tape is rewound for approx. 10 seconds of programme time, then replay starts.

Published in Heiloo, Holland.
www.freeservicemanuals.info
3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

www.freeservicemanuals.info

ENGLISH

USING THE CASSETTE ADAPTER

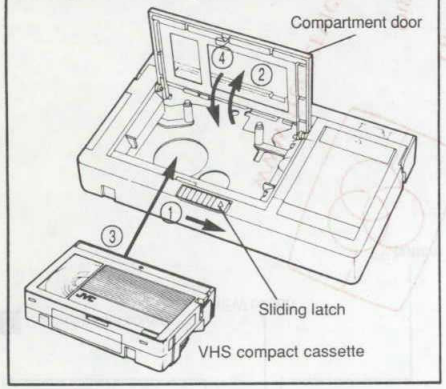
By using the Cassette Adapter, a VHS-C video cassette recorded with this VideoMovie can be played back with any deck-type VHS video recorder. Also, a VHS-C video cassette installed in the cassette adapter is fully compatible for both recording and playback on any deck-type VHS video recorder.

Note:

- Only compact video cassette tapes marked VHS C can be used with the Cassette Adapter.

- **C-P6U Cassette Adapter (optional)**

Being battery-operated, the C-P6U performs tape loading and unloading automatically.

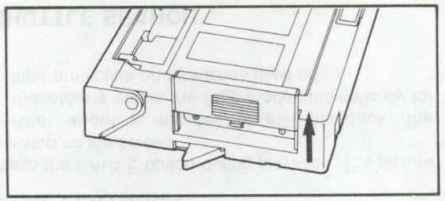


Note:

- During special-effects playback (slow motion, still frame, etc.) the picture may vibrate or noise bars may appear on the screen.

Inserting the battery into the cassette adapter

1. Remove the battery cover by sliding it up.
2. Install one "R6" battery and reattach the cover.

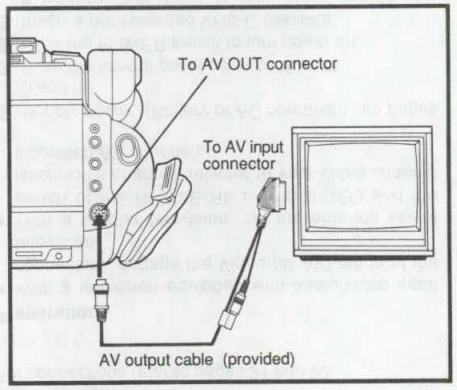


CONNECTIONS TO A TELEVISION FOR PLAYBACK

1 Connection to a television equipped with A/V input connector

For this situation, use the provided AV output cable.

- Use the A/V output cable to simply connect the AV OUT connector of the VideoMovie to the AV input connector (21-pin, SCART) of the TV.



2 Connection to a television not equipped with A/V input connector

For this situation, use the optional RF unit.

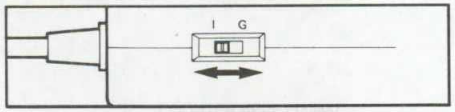
1. Remove the aerial cable from the TV receiver.
2. Connect the aerial cable to the ANTENNA IN terminal of the RF unit.
3. Connect the RF OUT terminal of the RF unit to the aerial terminal of the TV receiver using the provided aerial cable.
4. Connect the VIDEO/AUDIO INPUT cable of the RF unit to the AV OUT connector of the VideoMovie.
5. Adjust the RF converter output channel according to your VIDEO CHANNEL.

PRECAUTIONS FOR RF UNIT

- For exclusive use with the VideoMovie.
- Do not disassemble or remodel the RF unit
- Do not expose it to strong shocks.
- Unplug the connected equipment during lightning storms. (Never touch the aerial cable.)

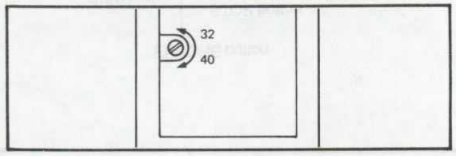
- **TV system select switch (I/G)**

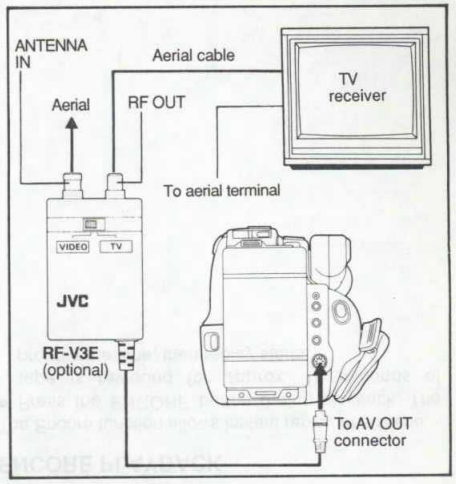
When you use a TV receiver built on the British PAL standard, shift the system select switch to "I".



- **RF converter channel adjustment screw**

To make this adjustment, remove the small cap on the back of the RF unit and turn the adjustment screw with a screwdriver to tune in a vacant channel. The RF unit permits playback of video and audio recordings through a TV receiver. The signals from the RF unit are viewed through a vacant channel not used for broadcasting in your area. The output frequency of the RF converter has been set to correspond to a broadcast on UHF channel 36. To view playback pictures from the VideoMovie with your TV receiver, tune its specified AV channel to UHF channel 36. If channel 36 is employed for broadcasting in your area, readjust the RF converter output channel to one of the vacant channels between 32 and 40.





OPERATION

- **Viewing video cassettes being played back with the VideoMovie**

To view video cassettes or to monitor the recording, set the VIDEO/TV switch of the RF unit to VIDEO and the TV channel selector to the channel corresponding to the RF output channel.

- **Viewing television programmes**

Set the VIDEO/TV switch to TV, and the TV receiver will function as usual.

- **RF converter channel adjusting procedure**

1. Set the AV channel of the TV receiver to one of the vacant channels.
2. Power the VideoMovie
3. Put the VideoMovie in the Rehearsal mode (see page 10).
4. Set the VIDEO/TV switch of the RF unit to VIDEO.
5. While monitoring the output signal on the TV screen, turn the RF converter channel adjustment screw to that the monitored picture comes in most clearly.

CAUTION:

To view the VideoMovie recordings with a TV receiver, use a TV receiver having a specified AV channel and employ this AV channel as your VIDEO CHANNEL, otherwise playback may be disturbed with vibrating or bending pictures. AV channels refer to channels exclusively for video playback; because AFC circuits are applied to these channels, the playback pictures can be stabilised. Recent TV receivers have one or more AV channels.

Published in Heiloo, Holland.

3/13/16

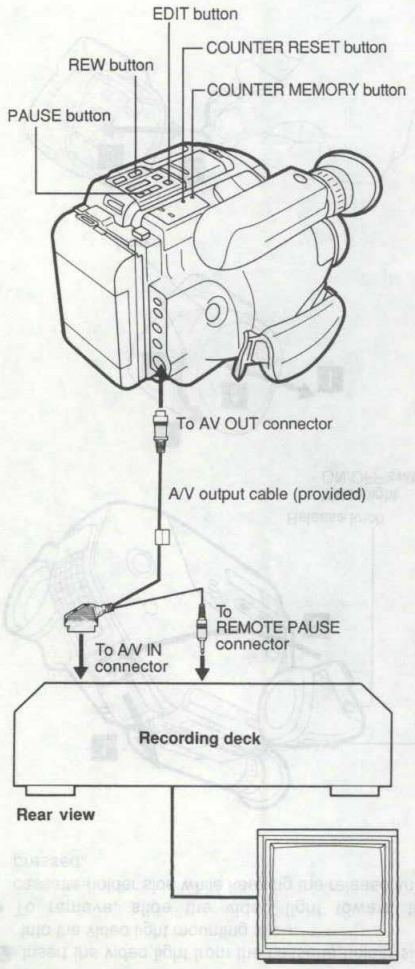
Digitized by WWW.FREESERVICEMANUALS.INFO

EDITING TECHNIQUES

ENGLISH

1 MASTER EDIT CONTROL SYSTEM (Assemble Editing) (When using a JVC VCR equipped with a Remote Pause terminal)

This feature functions only when using a designated JVC VCR equipped with a Remote Pause terminal. The Master Edit Control system enables control of the VCR via the VideoMovie's controls, for quality preroll editing without transition-point gaps and distortion.



Preparation

- Connect the VideoMovie and the recording deck as in the diagram on the left.
- Turn on both the VideoMovie and the recording deck.
- Correctly insert the appropriate cassettes into the VideoMovie and the recording deck.

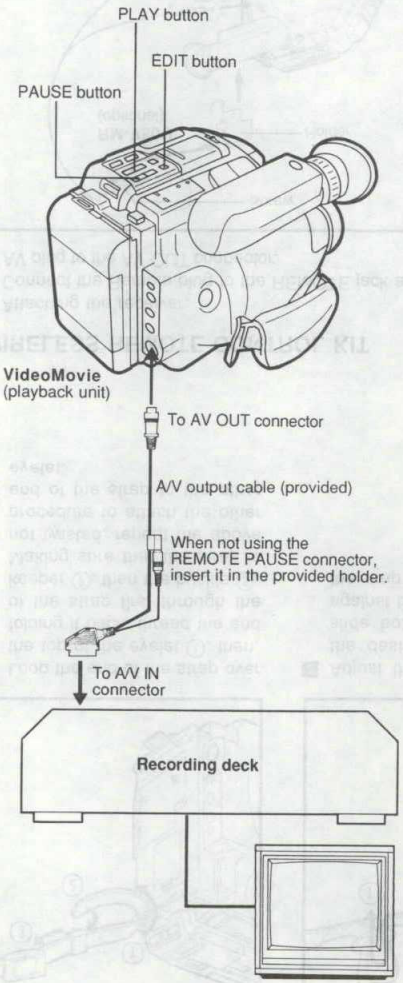
1. Engage the recording deck's Record-Pause mode. (At this time, the tape in the deck winds backward for 1.3 seconds.)
2. Engage the VideoMovie's Play mode to locate the edit-out point on the tape. When this point is reached, press PAUSE.
3. Press COUNTER RESET on the VideoMovie then press COUNTER MEMORY. "M 0000" will appear in the viewfinder.
4. Press REW to locate the edit-in point. When it is reached, engage the Still mode.
5. Press EDIT on the VideoMovie to start editing.
   - At this time, the VideoMovie and the recording deck carry out the following procedure automatically.
     1) The VideoMovie prerolls the tape for 5 seconds then starts playback to stabilize the tape run.
     2) After the VideoMovie has played back for 3.7 seconds, it sends a command signal to the recording deck. The deck then starts playback together with the VideoMovie for 1.3 seconds.
     3) When the VideoMovie's tape reaches the edit-in point, the deck starts recording in synchronization with it.

Note:
- There are some VCRs which are not compatible with the Master Edit Control system.

6. When the VideoMovie's tape reaches the edit-out point (counter reading of "0000"), the VideoMovie enters the Still mode and the recording deck enters in the Record-Pause mode automatically.
   - Repeat these steps as required.
   - When the tape reaches the preset edit-out point during the dubbing operation, it may stop slightly before or after the designated point on the tape.

2 TAPE DUBBING (Dubbing to a second recorder)

In order to perform simple dubbing of an entire tape, proceed as follows.



Preparations

- Make connections according to the diagram on the left.
- Turn on all components' power.
- Correctly insert the appropriate cassettes.

1. Engage the connected recorder's Record-Pause mode, and press the VideoMovie's PLAY and PAUSE buttons together to engage its Pause mode.
2. Press the VideoMovie's PLAY button and engage the connected recorder's Recording mode to start dubbing. (The VideoMovie starts playback; the recorder starts recording.)
3. To edit out unwanted material, engage the recorder's Record-Pause mode.
   - If using with a JVC VCR equipped with a Remote Pause terminal, perform as follows:
     1) Make connections according to the diagram on the left.
     2) Engage the connected recorder's Record-Pause mode.
     3) Press the EDIT button of the VideoMovie. The deck's recording begins in synchronization with the VideoMovie's playback start.

Published in Heiloo, Holland.
www.freeservicemanuals.info
3/13/16

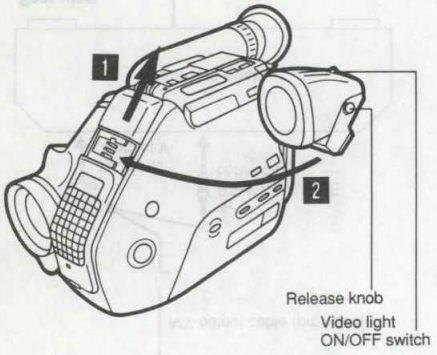
Digitized by WWW.FREESERVICEMANUALS.INFO

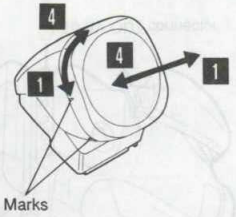
USING ACCESSORIES

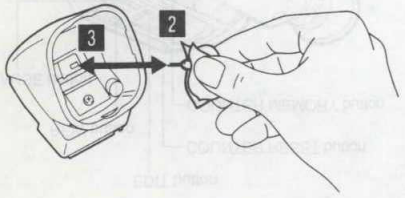
ENGLISH

ATTACHING THE VIDEO LIGHT

1 Slide the light shoe cover in the direction of the arrow.
2 Insert the video light from the cassette-holder side into the video light mounting shoe.
- To remove, slide the video light toward the cassette-holder side while keeping the release knob pressed.







TO APPLY MORE LIGHT TO THE SCENE (Turn on the video light.)

Slide the video light switch to ON.
- When not using the video light while attached to the VideoMovie, turn off the video light to save battery power.
- The video light can be used with the VideoMovie's control panel cover set to "CAMERA".

CAUTIONS

- The video light becomes extremely hot. Do not touch it either while in operation or soon after turning it off, otherwise serious injury may result.
- When replacing the bulb after using the video light, make sure to wait for it to cool off.
- Do not place the video light unit into the carrying case immediately after using it, since it remains extremely hot.
- When operating, keep a distance of about 30 cm between the video light and people or objects.
- Do not use in humid places. Damage may result to the light and its heat-resistant glass.
- Do not use near flammable or explosive material.
- Use only the provided video light with this mounting shoe. Do not attach a video light of a different type.
- This video light unit is exclusively for use with this VideoMovie.

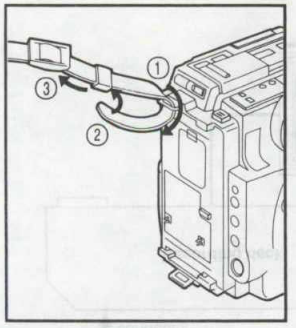
REPLACING THE VIDEO LIGHT BULB

It is recommended to consult your nearest JVC dealer for replacing the bulb. However, if you do it yourself, proceed as follows.

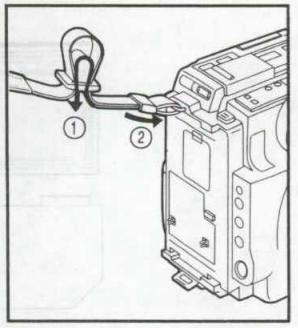
1 Turn the cover of the video light counterclockwise to remove it.
2 Pull the bulb toward you.
3 Insert a new bulb. At this time, it is important to hold the bulb using a soft cloth or tissue. Do not touch the bulb directly.
4 Replace the cover and turn it clockwise until the marks align.

Notes:
- The video light unit and the bulb are very hot immediately after the power is turned off. Bulb replacement should be performed after it has cooled. (It will take approx. 30 minutes to cool sufficiently.)
- Do not touch the bulb directly. If it becomes dirty, smoke or reduced service life may result. When accidentally touched by fingers directly, wipe it with a soft cloth.
- Give the part number YQ31040-001 when ordering a video light bulb.
- Use an exclusive halogen bulb which is available at your nearest JVC dealer.

ATTACHING THE SHOULDER STRAP (optional)

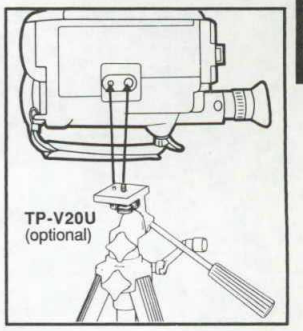


1 Loop the end of the strap over the top of the eyelet ①, then, folding it back, thread the end of the strap first through the keeper ②, then the buckle ③. Making sure that the strap is not twisted, repeat the above procedure to attach the other end of the strap to the other eyelet.



2 Adjust the shoulder strap to the desired length ①, then slide both keepers up snug against the eyelets to prevent the strap from slipping ②.

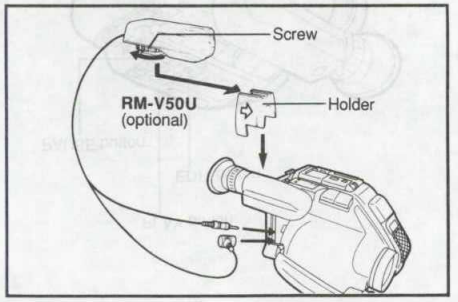
TRIPOD MOUNTING



Align the screw and camera direction stud of the tripod with the camera's tripod mounting socket and stud hole, and firmly tighten the screw.

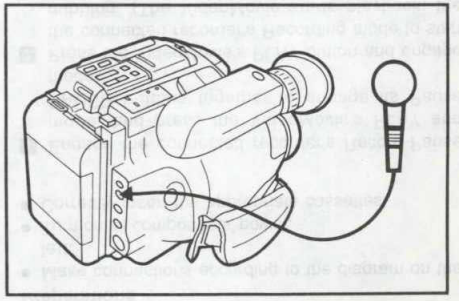
WIRELESS REMOTE CONTROL KIT

- Attaching the receiver.
  Connect the Remote plug to the REMOTE jack and AV plug to the AV OUT connector.



EXTERNAL MICROPHONE

To use another microphone, do the following:



Plug the external microphone's cord into the MIC jack.

Published in Heiloo, Holland.
www.freeservicemanuals.info
3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

USING THE REMOTE CONTROL UNIT RM-V50U/ RM-V20U (optional)

ENGLISH

The RM-V50U and RM-V20U permit VCR functions to be controlled from a distance.
*Before use, refer to the instruction booklets.

- Functions of the remote control unit's control buttons vary depending on the VideoMovie's control panel cover postion.

Buttons	Functions	
	With the VideoMovie's control panel cover set to "CAMERA".	With the VideoMovie's control panel cover set to "PLAY".
POWER ON	Power on (Does not function when using the Receiver.)	
POWER OFF	Power off	Power off
REC	—	—
START/STOP	Functions same as the Recording Start/Stop button of a VideoMovie.	
REW/RETAKE	Retake (Rewind)	Rew/Rew Shuttle Search
FF/RETAKE	Retake (Forward)	FF/FF Shuttle Search
REC TIME	Animation/Time-Lapse	—
INTERVAL	Self-Timer/Time-Lapse	—
VISS	Index Code Marking	—
PLAY	Recording Start	Playback/Start
PAUSE/ MONITOR	Record pause	Pause
STOP	—	Stop
INSERT	—	Insert Editing
AUDIO DUB	—	Audio Dubbing

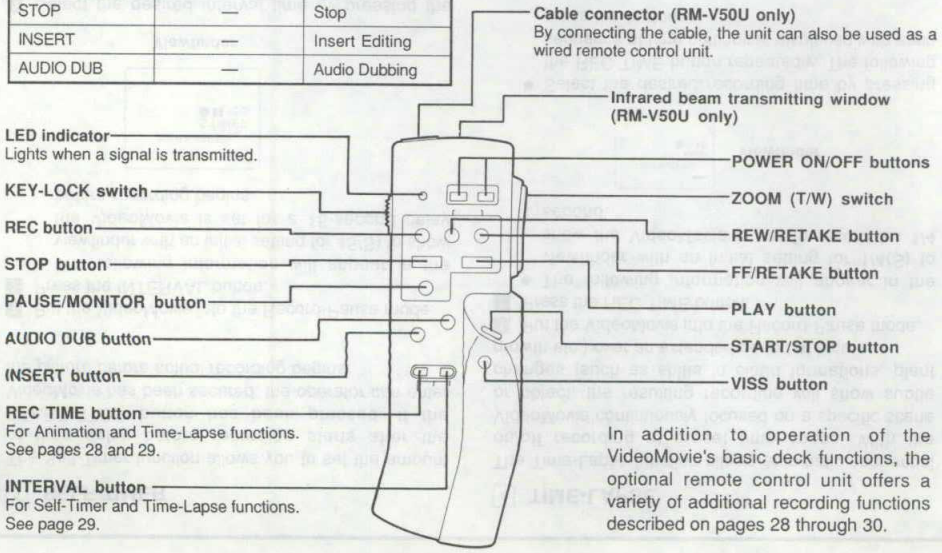
Installing the batteries

1. Slide the battery compartment cover on the rear of the unit.
2. Insert 2 AAA (R03)-size" batteries in the correct directions into the battery compartment.
3. Replace the cover.

Precautions

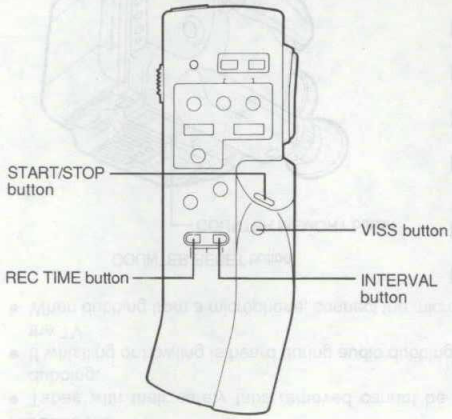
- Avoid violent shocks, especially take care not to drop the unit.
- Take care not to allow liquid to spill into the unit.
- Do not place heavy objects on the unit.
- Avoid leaving the unit in places subject to direct sunlight or extremely high temperatures.

- The optional RM-V50U remote control unit can operate the VideoMovie from a distance of up to 5 m.
- The transmitted beam may not be effective when the Beam receiver is directly exposed to sunlight. In such a case, use the transmitter as a wired remote control unit.



In addition to operation of the VideoMovie's basic deck functions, the optional remote control unit offers a variety of additional recording functions described on pages 28 through 30.

SPECIAL RECORDING FUNCTIONS VIA THE OPTIONAL RM-V15U



1 INDEX CODE MARKING

The VHS Index Search System (VISS) gives you automatic access to any point you select on a recording. Only the marking aspect of the Index Search System is included in this unit. It allows index codes to be placed on recorded tape for convenient dubbing or editing on VCRs with an Index Search function.

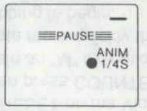
- Press the VISS button once to put an index code onto the tape. The INDEX mode indication blinks in the viewfinder during the marking process.
- When the "INDEX" indication appears in the viewfinder, no VideoMovie functions can be executed.
- If the VISS button has been pressed in the Record-Pause mode, an index code is put at the point where the START/STOP button is pressed.

2 ANIMATION

The Animation function produces the illusion of movement in otherwise stationary scenes or objects. This technique is accomplished by shooting a series of slightly different pictures of the same scene or slightly different poses of the same object for a brief period of time.

ENGLISH

1 Put the VideoMovie in the Record-Pause mode.
2 Press the REC TIME button.
- The following information will appear in the viewfinder with an initial setting for 1/4S to show the camera is set to record for about 1/4 second.



Viewfinder

3 Press the REC TIME button again to select the desired recording time. The following sequence of time setting is displayed with each press of the button:

1/4S → 1/2S → 1S → (regular recording mode) →

4 Press the START/STOP button after focusing the VideoMovie on the subject.
- Recording stops automatically in the Record-Pause mode after the selected period of time.

5 Repeat step 4 for the required number of pictures.
6 Playback the recorded series to check if results were satisfactory.
To release the Animation mode, press the REC TIME button until the "ANIM" indicator in the viewfinder disappears, or slide the control panel cover to "PLAY".

Notes:

- The Animation mode can only be engaged from the Record-Pause mode.
- Keep the VideoMovie steady in one position when filming the series of shots for best results. Mounting the VideoMovie on a tripod is recommended.
- Before recording in the Animation mode at the very beginning of a tape, set the VideoMovie to the Recording mode for about 5 seconds, so that the tape runs smoothly. Using the Fade-in function at this point is a good way to begin an animated program.
- If recorded background sound is undesirable, use the Audio Dubbing function to erase or replace it.
- When playing back an animated recording, the colour may be unstable with some TVs.
- Fade-in/out is not possible while the Animation or Time-Lapse shooting.

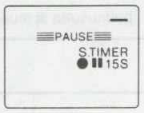
Published in Heiloo, Holland.
www.freeservicemanuals.info
3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

3 SELF-TIMER

The Self-Timer function allows you to set the amount of time delay before recording starts after the START/STOP button has been pressed. If the VideoMovie has been secured, the operator can enter the picture before actual recording begins.

1 Put the VideoMovie into the Record-Pause mode.
2 Press the INTERVAL button.
- The following information will appear in the viewfinder with an initial setting for 15(S) to show the VideoMovie is set for a 15-second delay before recording begins.



Viewfinder

3 Select the desired interval time by pressing the INTERVAL button repeatedly. The following sequence of time setting is displayed with each press of the button:

15S → 30S → 1M → 5M
(regular recording mode) ←

4 Press the START/STOP button. When the selected time has elapsed, recording begins automatically.
- When performing Self-Timer shooting, the tally lamp will start blinking approximately 10 seconds before the actual recording begins. Then when recording starts, the lamp lights normally to indicate recording is in progress.

To release the Self-Timer mode

When "–" is not blinking in the viewfinder
Press the INTERVAL button continuously until the Self-Timer indication goes off.
When "–" is blinking in the viewfinder
Press the START/STOP button to stop the blinking, then press the INTERVAL button continuously until the Self-Timer indication goes off.

- Turning the power off and on once engages the regular Record-Pause mode.

4 TIME-LAPSE

The Time-Lapse function allows automatic sequential on/off recording at preset time spans. With the VideoMovie continuously focused on a specific scene or object, the resulting recording will show subtle changes (such as shifts in cloud formations, plant growth etc.) over an extended period of time.

1 Put the VideoMovie into the Record-Pause mode.
2 Press the REC TIME button.
- The following information will appear in the viewfinder with an initial setting for 1/4(S) to show the VideoMovie is set to record for 1/4 second.

Viewfinder

- Select the desired recording time by pressing the REC TIME button repeatedly. The following sequence of time settings is displayed with each press the button:

1/4S → 1/2S → 1S → (regular recording mode)

3 Press the INTERVAL button.
- The following information will appear in the viewfinder with an initial setting for 15 seconds.

Viewfinder

4 Select the desired interval time by pressing INTERVAL button repeatedly. The following sequence of time settings is displayed with each press of the button:

15S → 30S → 1M → 5M
(regular recording mode) ←

5 Press the START/STOP button to start the Time-Lapse recording. The selected recording time and interval will alternate automatically.
- The tally lamp functions in the same way as in Self-Timer shooting.

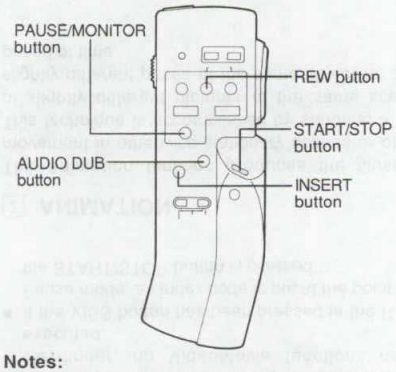
To release the Time-Lapse mode

When "–" is not blinking in the viewfinder
Press the INTERVAL and REC TIME buttons continuously until the Time-Lapse indication goes off.
When "–" is blinking in the viewfinder
Press the START/STOP button to stop the blinking, then press the INTERVAL and REC TIME buttons continuously until the Time-Lapse indication goes off.

Published in Heiloo, Holland.

5 INSERT EDITING

Insert editing means recording a new scene into a section of prerecorded tape so that a part of the original recording can be replaced with a new sequence without excessive picture distortion at the edit-in and edit-out points. In the Insert Edit mode, the original audio on the audio track remains unchanged.



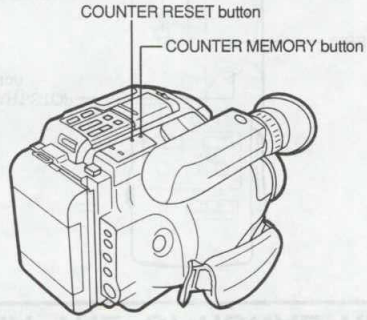
1 Locate the desired edit-out point on the VideoMovie's tape and press PAUSE/MONITOR.
2 Press RESET to obtain a "0000" reading, then press MEMORY to obtain an "M" indication in the viewfinder.
3 Press REW to rewind the tape a little beyond the beginning of the scene your wish to insert.
4 Press PAUSE/MONITOR exactly at the beginning of the scene you wish to insert.
5 While holding INSERT pressed, press PAUSE/MONITOR. The VideoMovie enters the Insert Edit mode with the scene at which the VideoMovie is aimed appearing on the screen for monitoring.
6 Press the START/STOP button to insert the new sequence.
7 When the counter reading of "0000" is reached, insert editing stops automatically and the VideoMovie enters the Playback mode.

Notes:
- When in the Still mode, the counter indication may be blurred. This is normal.
- When the tape reaches the preset edit-out point during the editing operation, it may stop slightly before or after the designated point on the tape. Also, at that time, noise bars may appear momentarily. Neither of these is a defect of the unit.
- Only video signals are recorded in the Insert Editing mode. When the sound is to be recorded, press the AUDIO DUB and PAUSE/MONITOR buttons simultaneously in the Insert Pause mode. When INSERT and PAUSE/MONITOR buttons are pressed simultaneously again, the unit re-enters the Video-signal-only Recording mode.
- Manual Focusing cannot be performed in the Insert Editing mode.

6 AUDIO DUBBING

Audio dubbing means recording a new soundtrack on a pre-recorded tape, i.e., replacing the original sound with new audio material.

Precautions
- Tapes with their safety tabs removed cannot be audio dubbed. Reseal the safety tab slot to perform the dubbing.
- If whistling or howling is heard during audio dubbing, reduce the TV volume of move the mike farther away from the TV.
- When dubbing from a microphone, connect the microphone to the VideoMovie.



1 Locate the desired edit-out point on the VideoMovie's tape and press PAUSE/MONITOR.
2 Press COUNTER RESET on the VideoMovie to obtain a "0000" reading, then press COUNTER MEMORY on the VideoMovie to obtain an "M" indication in the viewfinder.
3 Press REW to locate more quickly the place on the tape you want audio dubbing to begin.
4 Press PAUSE/MONITOR at the exact beginning point for audio dubbing.
5 While pressing AUDIO DUB, press PAUSE/MONITOR to enter the Audio Dub Standby mode.
6 When you are ready, press PLAY to begin audio dubbing.
7 When the counter reading of "0000" is reached, audio dubbing stops automatically and the VideoMovie enters the Playback mode.

www.freeservicemanuals.info
3/13/16

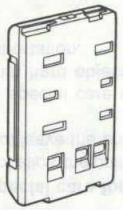
Digitized by WWW.FREESERVICEMANUALS.INFO

SYSTEMS FLEXIBILITY

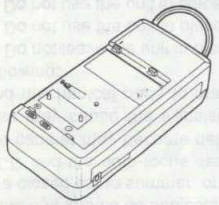
ENGLISH

For maximum enjoyment, make the most of the provided or optional accessories depending on the situation.

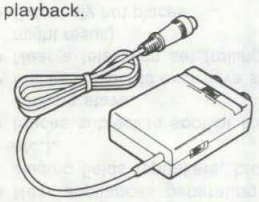
- **High-capacity battery pack BN-V14U**
- **Super-high-capacity battery pack BN-V22U**



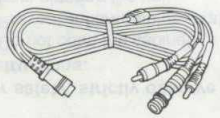
- **AC power adapter/battery charger AA-V3EG**
  Use to power the VideoMovie with household AC current or charge the battery pack.



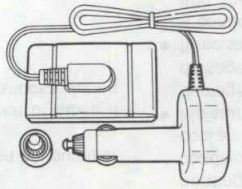
- **RF unit RF-V3E**
  Page 22
  Use to connect the VideoMovie to a regular television for playback.



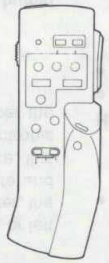
- **A/V output cable VC-V826E**
  Use to connect VideoMovie to a television equipped with audio/video input connectors for playback, or to a VCR for dubbing or editing.



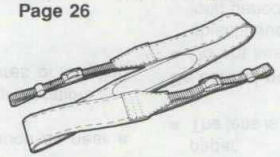
- **Car battery cord AP-V6E**
  Use to power the VideoMovie using a car battery.



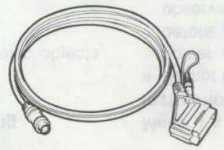
- **Remote control unit RM-V50U/RM-V20U**
  Page 27
  Controls VideoMovie's VCR functions from a distance.



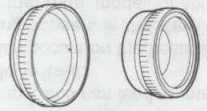
- **Shoulder strap VU-V220U**
  Page 26



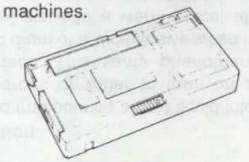
- **A/V output cable VC-V8961SE**
  Use to connect the VideoMovie to a TV or VCR equipped with a 21-pin connector for monitoring or dubbing/editing.



- **Conversion lens kit GL-V7U**
  Consists of telephoto (1.4x) and wide-angle (0.7x) conversion lenses.



- **Cassette adapter C-P6U**
  Enables the VHS-C cassette to be used with regular VHS machines.



- **VHS-C cassettes EC-45/30**
  Allows 45/30 minutes of recording and playback respectively.

- **System carrying case CB-V38U**
  Use to carry the VideoMovie together with basic accessories.

- **Active carrying case CB-V26U**
  Use to carry the VideoMovie.

SUPPLEMENTAL INFORMATION

What is "colour temperature"?

Light is composed of various colour components in different proportions. A relationship exists between the temperature of a light source and the colour components of the emitted light; as the temperature rises, the colour of the light varies from red, orange, yellow, white to blue in that order. "Colour temperature" is a value that expresses differences in colour among light sources, measured in Kelvin degrees. Bluish light has a higher colour temperature than reddish light.

What is "white balance"?

Making the colours look natural on TV is what white balance is all about. Because a camera is not as adaptable as the human eye, if a light source is reddish, white subjects in that light are recorded as reddish. White balance adjustment is performed to compensate for colour temperature variations of light so that whites are reproduced as white. Correct white balance makes all other colours correct. The VideoMovie can perform automatic white balance adjustment. However, if illumination is insufficient, white balance adjustment cannot be performed. To obtain correct colours, therefore, sufficient illumination is essential.

What is "illuminance"?

"Illuminance" (also called "luminance") is the intensity or brightness of light, expressed in lux. The VideoMovie is designed to provide best pictures under the conditions of a 700-lux illuminance, although shooting is possible all the way down to 3 lux. To obtain good pictures in very bright light, the use of an ND (neutral density) filter is recommended. (See chart on the right.)

How to get good colour pictures.

The simplest way is to provide sufficient lighting (close to the camera's reference illuminance) and accurately adjust the camera to the colour temperature of that lighting. If light sources of different colour temperatures are used together, accurate white balance adjustment is very difficult. For example, if natural light is mixed with artificial light, which is likely to occur next to windows, correct colours of the subject are difficult to obtain. It is recommended in such cases that curtains in the room be closed to shut out light from outside. Also, when artificial lighting devices are used, they should all have the same colour temperature. For example, it is recommended that incandescent or halogen lamps not be used together with fluorescent lighting.

Colour temperatures of various artificial lighting

Type of illumination		Colour temperature
Tungsten lamp for home use		2800 K
Tungsten lamp for photographic use		3200 K
Quartz-halogen lamp		
Blue lamp for photographic use		5000 K
Fluorescent lamp	Warm white	3500 K
	White	4500 K
	Daylight type	6500 K

Illuminance chart

- The values on this chart are approximated to give you a rough reference.

	Unit: Lux	
ND filter desired	100,000	• Clear sky, mid-day, under sunlight 100,000
		• Clear sky (10:00 a.m.) under sunlight 65,000
		• Clear sky (3:00 p.m.) under sunlight 35,000
		• Cloudy sky (mid-day) under sunlight 32,000
		• Cloudy sky (10:00 a.m.) under sunlight 25,000
Range for practical use	10,000	• By the window during the afternoon 3,500
	2,000	• Cloudy sky (one hour after sunrise) 2,000
	1,000	• Clear sky (one hour before sunset) 1,000
	600	• Counters at department stores 500–700
	500	• Bowling centre 500
		• Office under fluorescent light 400–500
		• Library 400–500
		• Direct light of a flashlight at 1 m distance 250
Lighting desired	100	• Streetlight at night 150–200
	80	
	Minimum lighting for an object	
	15	• Cigarette lighter(at a distance of 30 cm) 15
	10	• Candlelight(at a distance of 20 cm) 10–15

Published in Heiloo, Holland.
www.freeservicemanuals.info
3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

CAUTIONS

ENGLISH

For safety, strictly observe the following instructions.

- Do not open the cabinet.
- Prevent inflammables, water and metallic objects from entering the unit.
- Do not disassemble or modify the unit.
- Do not use the unit when there is lightning in the vicinity. Disconnect the power cable of connected equipment.

Avoid using the unit under the following conditions:

- Places subject to excessive humidity or dust.
- Near appliances generating strong magnetic or electric fields (speakers, broadcasting antennas, etc.).
- Places subject to soot or steam such as near a cooking stove.
- Places subject to excessive shock or vibration.
- Near a television set (rolling pictures or howling might result).
- Extremely hot places.

Do not expose the unit to high temperatures over 40°C for long periods.

If the unit should be subjected to direct sunlight, or left in a closed car in summer, or placed near a heater, the CCD and the auto-focus sensor may deteriorate and the cabinet may become deformed. Furthermore, this also may cause the transistors and other electronic and mechanical parts to malfunction. Remember the following:

- Do not leave the unit in places of over 50°C
- Do not use the unit in places of over 40°C
- Do not use the unit in places of below 0°C
- Protect the unit from excessively dry or humid conditions (below 35% or above 80% humidity).
- For long storage, select a place between –20°C and 30°C

Take special care for protection of the unit.

- Do not allow the unit to become wet.
- Do not leave the unit in closed cars on hot summer days.
- Take special care not to drop the unit or strike it against hard objects. Protect from shocks during transportation.

Make it a rule to observe the following instructions.

- Do not remove the battery pack or disconnect other power supply units during recording or playback before pressing the POWER switch to OFF. If not observed, this will cause tape damage.
- When the unit is not in use, remove the battery pack.

Keep the lens and viewfinder eyepiece always clean.

- When the lens if dirty or dusty, blow it off first and then gently wipe with a soft brush or lens cleaning paper.
- The lens is likely to become moldy if left dirty.

Be careful not to damage the CCD.

- Do not keep the lens directed at extremely bright objects such as the sun or other light sources for long periods. Although the CCD is less susceptible to such burn than a tube would be, caution should be exercised when using this unit. Most importantly, the lens should be capped except while actually shooting.
- Do not direct the eyepiece of the viewfinder at the sun.

Handle the unit carefully.

- Protect the microphone from excessive shocks.
- Do not carry the unit by holding it only by the viewfinder.

Moisture condensation.

- You have observed that pouring a cold liquid into a glass will cause drops of water to form on the glass's outer surface. This same phenomenon occurs on the head drum of a VideoMovie when it is moved from a cool place to a warm place, after heating a cold room, under extremely humid conditions or in a place directly subjected to the cool air from an air conditioner.
- Moisture on the head drum can cause severe damage to the video tape, and can lead to internal damage to the VideoMovie itself.
- If moisture condensation occurs on the head drum, a condensation warning appears in the viewfinder and the unit enters the Stop mode, unable to function. In such a case, wait for a few hours until the indicator disappears.

Maintenance

- When the cabinet is dusty, clean by gently wiping with a soft cloth.
- Avoid the use of strong cleaning agents such as benzine or alcohol as they may damage the cabinet.
- Cleaning should be done only after the battery pack has been removed or other power units have been disconnected.

Serious malfunctioning

If malfunctioning occurs, stop using the unit immediately and consult your local JVC dealer.

General Battery Precautions

- When the optional RM-V50U/RM-V20U/C-P6U is not functioning even when correctly operated, the batteries are exhausted. Repalce them with fresh batteries.
- Use only following batteries in the unit.
  RM-V50U/RM-V20U .....AAA (R03) size
  C-P6U.....AA (R6) size

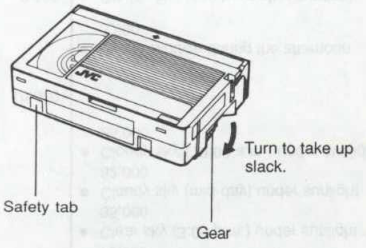
Please make note of the followiing rules for battery use. When misused, batteries can leak or explode.

1. Insert the batteries correctly according to the diagram inside the battery section.
2. Do not use old and new batteries together.
3. Do not use two different kinds of batteries Although sizes may be the same, voltages may differ.
4. Do not expose batteries to excessive heat as they can leak, or explode. Do not dispose of batteries in a fire.
5. Remove batteries from the unit if it is to be stored for an extended period to avoid battery leakage which can cause malfunctions.

VIDEO CASSETTES

ENGLISH

- The VideoMovie employs only the cassettes carrying the VHS-C mark.
- Recording onto prerecorded tapes automatically erases the previously recorded video and audio signals.
- An inverted cassette cannot be inserted.
- Do not load and unload the cassette repeatedly without allowing the tape to run at all. This will slacken the tape and thereby damage it.
- Make certain before loading the cassette that the tape is not slack. If there is any slack, turn the gear on the cassette in the direction of the arrow to take up slack.
- The cassette is equipped with a safety tab to prevent accidental erasure. When the tab is removed, recording is impossible. If you wish to record on a cassette whose tab has been removed, use adhesive tape to reseal the slot.
- To avoid excessive exposure to dust and fingerprints, do not open the front tape cover.



Storage of cassettes

- Avoid exposing the cassettes to direct sunlight. Keep them away from heaters.
- Avoid storing the cassettes in humid or dusty places.
- Do not drop the cassettes. Do not expose them to violent vibrations or shocks.
- Do not expose the cassettes to strong magnetic fields (near a motor, transformer or magnet).
- Place the cassettes in cassette cases and position them vertically.

Published in Heiloo, Holland.
www.freeservicemanuals.info
3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

IN CASE OF DIFFICULTY

ENGLISH

What may initially appear to be trouble is not always a real problem. Make sure first...

Symptoms	Check points
Power	
No power is supplied.	• Is the battery pack correctly installed? • Is the battery pack charged? • Is the power supply unit correctly connected?
Recording	
Recording is impossible.	• Check to see if the cassette safety tab in place. See page 34.
No sound is recorded with an external microphone.	• Is the microphone's switch set to ON?
Recording does not start.	• Have you slidden the control panel to "CAMERA" first?
Playback	
Tape is running, but no playback picture appears.	• Is the VIDEO/TV switch of the RF unit set to VIDEO? • Is the TV receiver set to your video channel? • If A/V connection is used, is the TV's VIDEO/TV switch set to VIDEO?
Noise bars appear in the playback picture.	• Use the TRACKING buttons to reduce noise bars.
Playback picture is blurred or interrupted.	• Video heads may be dirty or worn out. For head cleaning or replacement, consult the nearest JVC Service Dealer.
Tape transport	
Tape stops during fast forward or rewind.	• Is the "M" indication visible in the viewfinder? If so, press the COUNTER MEMORY button to cancel the memory function.
Rewinding or fast forwarding is impossible.	• Check to see if the tape has already been fully wound on one reel or the other.
Other	
Vertical white lines appear when shooting a very bright object.	• This may occur when the background contrasts very much with the object. This is normal.

Note on removing a power supply unit
Do not remove the power supply unit during recording or playback. This will cause damage to the tape.

The VideoMovie is a microcomputer-controlled device. External noise and interference might prevent it from functioning properly. In such cases, first disconnect its power supply unit (battery pack, AC power adapter, etc.); and then reconnect it and proceed as usual from the beginning.

www.freeservicemanuals.info
Free service manuals
Gratis schema's
Digitized by

Published in Heiloo, Holland.

SPECIFICATIONS

Format	:	VHS PAL standard
Power source	:	DC 6 V ⎓
Power consumption	:	8 W
Signal system	:	PAL-type
Video recording system	:	Luminance: FM recording Colour: Converted sub-carrier direct recording Conforms to VHS standard
Cassette	:	VHS C cassette
Tape speed	:	23.39 mm/sec
Recording time Max.	:	45 minutes (with EC-45 cassette)

VIDEO

Output	:	1 Vp-p, 75 ohms, unbalanced (via AV OUT connector)
S/N ratio	:	More than 43 dB (with Rohde & Schwarz noise meter)

AUDIO

Output	:	–6 dBs, 1 k-ohm (via AV OUT connector).
Microphone input	:	–68 dBs, high impedance, unbalanced

CAMERA

Pick up	:	1/3"-format CCD
Minimum required illumination	:	3 lux (Gain-Up ON)
Illumination range	:	3 to 100,000 lux
Lens	:	F/1.4, f = 6.7 to 54 mm, 8:1 power zoom lens with auto iris and macro control, filter diameter 43 mm
Viewfinder	:	Electronic viewfinder with 0.6" black/white CRT
Selectable high-speed shutter	:	Switchable (1/50, 1/60, 1/125, 1/250, 1/500, 1/1000, 1/4000 second)
White balance adjustment	:	Full-auto

GENERAL

Operating temperature	:	0°C to +40°C
Operating humidity	:	35% to 80%
Storage temperature	:	–20°C to +50°C
Weight	:	Approx. 800 g (without Lens cap, Pad, Thumb rest, Video light)
Dimensions	:	110(W) x 120(H) x 163(D) mm (incl. viewfinder)

AA-V3EG SPECIFICATIONS

Power requirement	:	AC 110 to 240 V∿, 50/60 Hz
Power consumption	:	22 W
Output	:	DC 8.5 V ⎓, 1.3 A (Charge), DC 6 V ⎓, 1.8 A (VideoMovie)
Charging system	:	Constant current, peak detection, timer controlled
Dimensions	:	145(W) x 42(H) x 69(D) mm
Weight	:	Approx. 380 g

VIDEO LIGHT SPECIFICATIONS

Power consumption	:	3 W
Video light bulb	:	Holgen bulb
Life span	:	Approx. 50 hours
Colour temperature	:	3,200K
Dimensions	:	46(W) x 36(H) x 46(D) mm
Weight	:	Approx. 20 g

PROVIDED ACCESSORIES

AC power adapter/battery charger AA-V3EG
Battery pack BN-V14U
Battery for clock operation CR2025
VHS-C cassette EC-30
A/V output cable
Video light

For optional accessories, see page 31.

Design and specifications subject to change without notice.

ENGLISH

www.freeservicemanuals.info
3/13/16

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

SECTION 1
SERVICE CAUTIONS & DISASSEMBLY

1.1 PRECAUTIONS

1. Before disassembling/re-assembling the set as well as soldering parts, make sure to disconnect the power cable.
2. When disconnecting/connecting connectors, pay enough attention to wiring not to damage it.
3. In general, chip parts such as resistors, shorting jumpers (0-ohm resistor), ceramic capacitors, diodes, etc. can not be reused after they were once removed.
4. When installing parts, be careful not to do with other parts as well as not to damage others. (Pay the most careful attention to the upper drum ass'y and tape transport mechanism.)
5. When removing ICs, be careful not to damage circuit patterns.

1.2 REQUIRED TEST EQUIPMENT, FIXTURES/TOOLS AND OTHERS

For proper measurement and adjustment, make sure to use the following test equipment, fixtures/tools besides general tools.

1.2.1 Test equipment, etc.

1. Color TV monitor
2. AC power adapter (AA-V3, AA-V6 or equivalent)
3. Oscilloscope (dual-trace type, for more than 20 MHz)
4. Frequency counter
5. Audio level meter and audio signal generator
6. Video signal generator
7. Sweep generator
8. Vectorscope

- **Color bar signal**

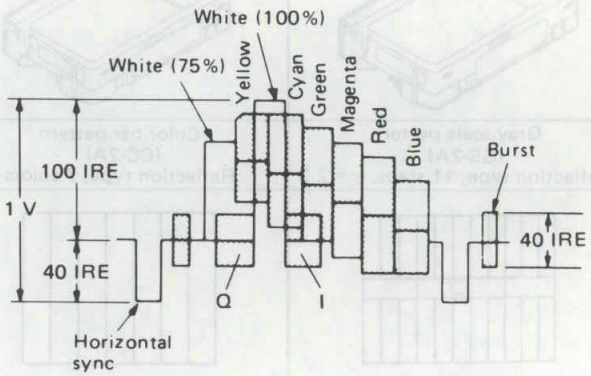


Fig. 1-2-1 Color bar signal waveform

- **Color bar pattern**

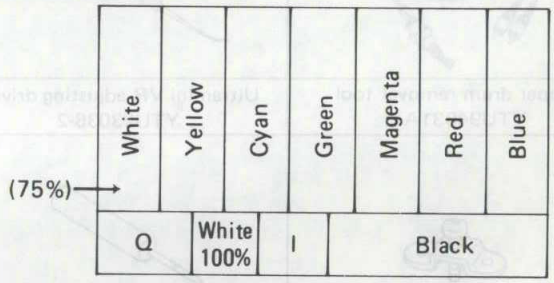


Fig. 1-2-2 Color bar pattern

- **Color sweep signal**

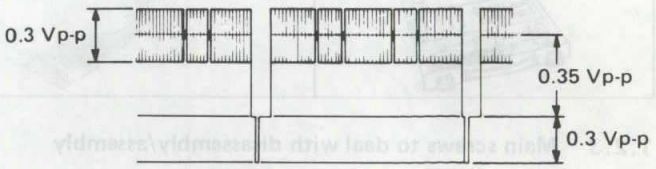


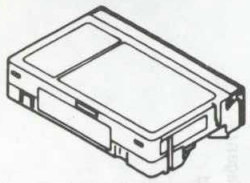
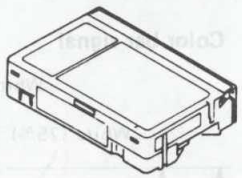
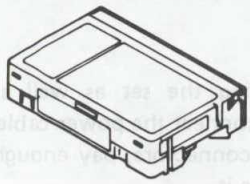
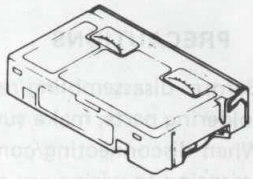
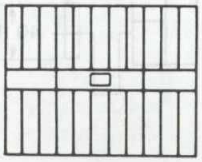
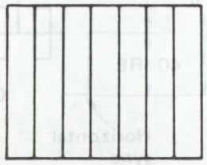
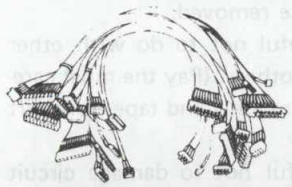
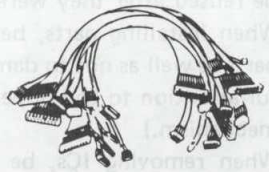
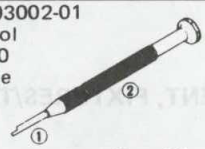
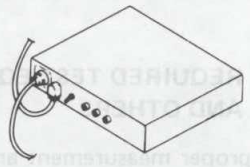
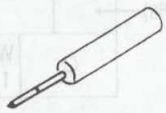
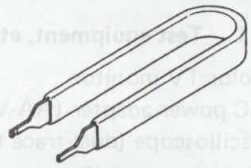
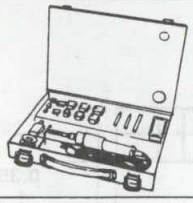
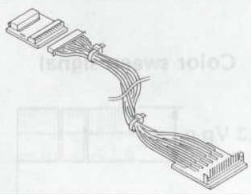
Fig. 1-2-3 Color sweep signal

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

1.2.2 Special test equipment and tools required for adjustment

Alignment tape for SP interchangeability (MHPE-C or MH-C2)	*** Alignment tape for LP interchangeability (MHPE-LC)	Alignment tape for N. SP PB Y/C level (MHVE-2C or MH-C2)	Cassette torque meter PUJ50431-2
			
Gray scale pattern (GS-2A) Reflection type, 11 steps, γ = 2.2	Color bar pattern (CC-2A) Reflection type, 7 colors	Patch cord set YTU93047A	Patch cord set YTU93040A
			
Y/C separator cable YTU93006	* Chip IC replacing tool PTS40844-2	A/C head positioning tool YTU93002A (incl. ① & ②)	Y/C separator PUJ25579-2
		① YTU93002-01 Bit tool ② PD-3.0 Handle  Orders for ① & ② can be placed separately.	
Upper drum removal tool YTU94031A	Ultramini VR adjusting driver YTU93036-2	0.35 mm adjusting driver YTU94028	*Connector Extractor YTU94036A
			
*SMC Replacement Tools YTU94038C	**TEST POINT Fixtures YTU94047A		
			

*Note: They are convenient for replacing chip parts.

**Note: Refer to page 8-10

***Note: MHPE-LC is used for the EK/EA/EG(S) version.

Table 1-2-1

1.2.3 Main screws to deal with disassembly/assembly

Table 1-2-2 lists screws by their symbols which correspond to those shown in figures of this section "Service Cautions & Disassembly".

Symbol of Screw	Shape	Parts Number
Ⓐ		YQM30032-5-2
Ⓑ		YQM30052-3
Ⓒ		YQM30052-2
Ⓓ		YQM30032-1-2
Ⓔ		SPSF2005Z
Ⓕ		SPSP2004Z

Symbol of Screw	Shape	Parts Number
Ⓖ		DPSP2009Z
Ⓗ		SPSK2004F
Ⓘ		YU30398-002
Ⓙ		SPSH1725M
Ⓚ		YQ40691
Ⓛ		YU30525-004

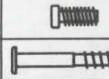
Symbol of Screw	Shape	Parts Number
Ⓝ		YU30407-021
Ⓟ		YU30407-022
Ⓠ		SPSH2050D
Ⓡ		YQM30032-45
Ⓢ		YQM30032-2-2
Ⓣ		SPSN2005Z

Table 1-2-2

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

1.3 SMC Replacement Tools (YTU94038A/B/C)

1.3.1 Outline

The trend in recent years toward ever more compact electronic products has brought about increased use of surface mounted components (SMC). The videomovie series has already been using these parts for several years. Their replacement is often cited as the most difficult aspect of videomovie service and a major cause of reduced service efficiency.
A special soldering tool set has been designed for use in replacing surface mounted components. It includes a range of interchangeable tips that enables application for all SMC used in the videomovie series.
The set features greatly increased work efficiency in comparison with generally marketed tools, together with easy use that does not require advanced training.
Although the set is specifically designed for the videomovie series, it is also useful for replacing general types of SMC. It is therefore highly recommended.

1.3.2 Kit description

• **Full system**

The system includes a selection of flat IC removal tips for sizes used in the videomovie. It allows increased work efficiency approaching that of the hot air unit. The set is also fully capable of general purpose soldering. Since the cost is considerably less than the hot air system, the kit is recommended for typical service stations.
The following three types are available for use according to the local power line voltage.

1. (YTU94038A) For 100 V areas
2. (YTU94038B) For 120 V areas
3. (YTU94038C) For 220 V areas

Set composition

Soldering iron
IC tips
Chisel shaped tip
Pointed tip
Flux
Desoldering wire
Solder (0.3 mm)
IC removing tool
Narrow tipped tweezers

• **Part descriptions**

1. Soldering iron
   YTU94038-001 For 100 V areas
   YTU94038-002 For 120 V areas
   YTU94038-003 For 220 V areas
2. Holder for general purpose tips
   Tip holder (YTU94038-010)

Tip holder

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

3. Desoldering wire for small parts (0.6 mm) (YTU94038-050)
   Desoldering wire is used for removing residual solder after removing the part. Thin type is used for miniature parts.
   Desoldering wire thickness greatly affects work efficiency. This type tends to absorb the soldering iron heat. With a fine tipped soldering iron, use the thinnest type available.

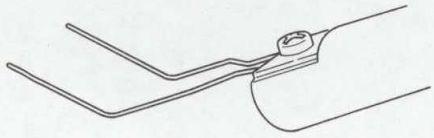
4. Desoldering wire for IC use (2.0 mm) (YTU94038-051)
   (See above)

5. Solder for SMC (0.3 mm diameter) (YTU94038-052)
   Use thin rosin core solder of about 0.3 mm. For general chip parts, the 0.6 mm size is suggested. Solder composition should be 60% tin, 40% lead.

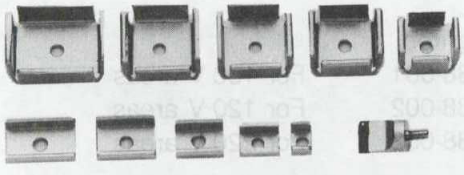
6. Electronic parts flux (YTU94038-053)
   Flux is used for improving soldering efficiency. It is expecially needed for quickly soldering ICs with many leads.
   Rosin flux is ordinarily included in electronic solder. But this may be absent or insufficient in the thinnest sizes. Additional flux is therefore applied to the circuit pattern before soldering in order to improve effectiveness. However, after soldering, use care to clean off remaining flux, since it can be oxidized when the circuit temperature increases.

7. Narrow tipped tweezers (YTU94038-054)
   Tweezers are used when installing miniature parts.

8. IC removing tool (YTU94038-055)



9. IC tip set (YTU94038-200)
   This is a set of only the tips for the above full system. The tips may need replacement after extensive use.



10. Chisel shaped soldering tip (YTU94038-160)

11. Pointed soldering tip (YTU94038-161)

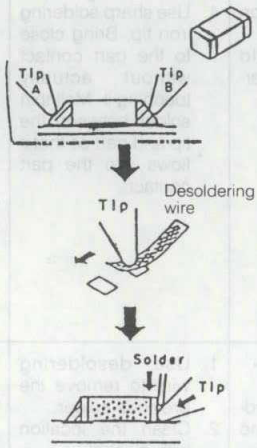
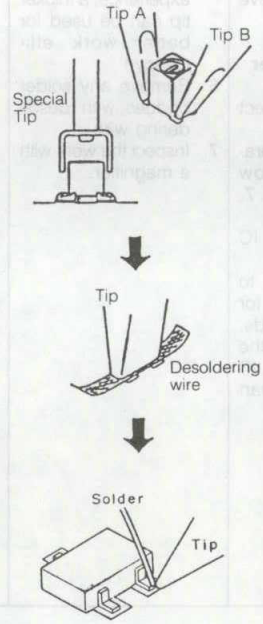
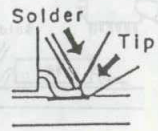
Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

1.4 BASIC KNOWLEDGE OF VIDEOMOVIE SMC* PARTS REPLACEMENT

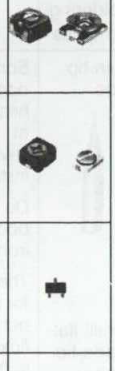
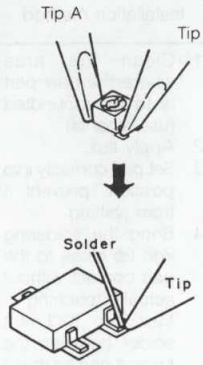
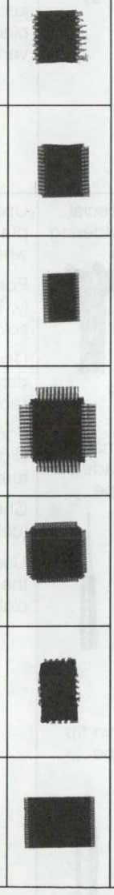
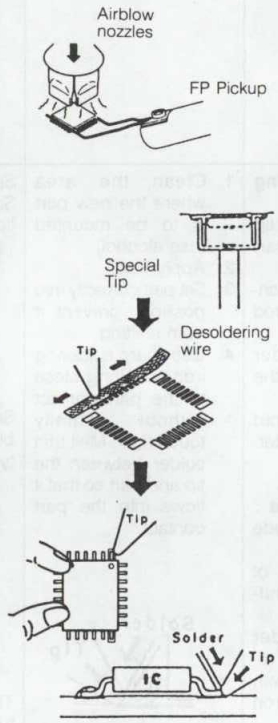
Note: *For details, refer to "VIDEO SERVICE GUIDE" (VTS81001).*

Products	Appearance	Replacement technology	Removal method	Installation method	Soldering tip types	Cautions
Thick Film Chip Resistors Carbon Film Chip Resitors Metal Film Chip Resistors Chip Ceramic Capacitors Chip Triming Resistors			• **Use 2 soldering irons** 1. Use thin tip soldering irons. 2. Use soldering tip temperature of about 280°C. 3. Simultaneously heat both ends of the part. 4. While heating, grasp the part with the tips of the soldering irons and remove it. 5. Use desoldering wire to completely remove the old solder from the part location of the board. 6. A clean pattern for installing the new part is very important.	1. Clean the area where the new part is to be moundted (use alcohol). 2. Apply flux. 3. Set part correctly into position, prevent it from shifting. 4. Bring the soldering iron tip close to the part contact without actually touching it. Melt thin (0.3 mm) solder between the tip and part so that it flows into the part contact. 5. Check work quality with a magnifier.	Thin tip type Small flat-blade tip type 	Some parts can be damaged by sudden heating. Preheat the part at about 100°C for several minutes before installing it. Do not touch the part body with the soldering iron. The thin (0.3 mm) solder for miniature parts does not contain adequate flux. Supplementary flux is thus needed in most cases. Set the position carefully and secure the part. A defective trimming resistor cannot be adjusted externally. Replace with an ordinary variable resistor.
Chip Inductors Chip Resistor Networks Chip Tantalum Capacitors Chip Tantalum Electrolytic Capacitors Chip Aluminum Electrolytic Capacitors Chip Transformers Chip Filters			• **Special desoldering iron** 1. Select soldering tip according to part size. 2. Bring the tip into contact with the soldered points. 3. When the solder melts, remove the part. 4. Remove the old solder with desoldering wire. • **2 soldering irons** 1. Use small flat-blade tips. 2. Heat both ends of the part simultaneously. 3. When the solder melts, grasp and remove the part with the soldering iron tips. 4. Remove the old solder with desoldering wire.	1. Clean the area where the new part is to be mounted (use alcohol). 2. Apply flux. 3. Set part correctly into position, prevent it from shifting. 4. Use sharp soldering iron tip. Bring close to the part contact without actually touching it. Melt thin solder between the tip and part so that it flows into the part contact.  5. Check work quality with a magnifier.	Special Soldering tip Small flat-blade tip type Thin tip type 	Use care not to damage plastic components when soldering. Position the part carefully. This will also affect the soldering operation. Use care regarding soldering iron tip and avoid rapidly heating parts. For larger parts, use a slightly higher temperature (about 300°C). Check after installing (cold solder joints, etc.). Use care not to damage the circuit pattern, especially when removing.

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

Products	Appearance	Replacement technology	Removal method	Installation method	Soldering tip types	Cautions
Chip VRs Chip Trimmer Capacitors Diodes Transistors			• **2 soldering irons** 1. Use small flat-blade tips. 2. Heat the leads of the part simultaneously. 3. When the solder melts, grasp and remove the part with the soldering iron tips. 4. Remove the old solder with desoldering wire.	1. Clean the area where the new part is to be moundted (use alcohol). 2. Apply flux. 3. Set part correctly into position, prevent it from shifting. 4. Use sharp soldering iron tip. Bring close to the part contact without actually touching it. Melt thin solder between the tip and part so that it flows into the part contact.	Thin tip type Small flat-blade tip type 	Use care not to damage the part when soldering. Check for solder joints, expecially miniature parts with small leads.
IC (SOP) (Small Outline Package) IC (SSOP) (Shrink Small Outline Package) IC (VSOP) (Very Small Outline Package) IC (QFP) (Quad Flat Package) IC (VQFP) (Very Small Quad Flat Package) IC (PLCC) (Plastic Leaded Chip Carrier) IC (TSOP) (Thin Small Outline Package)			• **Special desoldering iron** 1. Select the tip according to the size and shape of the IC. 2. "Tin" the tip with a small amount of solder. 3. Set the tip squarely over the IC leads. 4. When the solder melts, carefully twist the iron. 5. Raise and remove the IC. • **Shaped airblower unit** 1. Select the correct nozzle. 2. Select the temperature and airblow (suggested: temp. 7, airblow 4). 3. Engage the IC removing tool. 4. Use the airblow to preheat the IC for about 5 seconds, then heat with the nozzle until the IC remover lifts the part from the board.	1. Use desoldering wire to remove the previous solder. 2. Clean the location with alcohol. 3. Apply flux. 4. Position the IC and solder two pins at opposite sides. 5. Use a sharp tipped soldering iron and carefully solder each pin. (After gaining experience, a thicker tip can be used for better work efficiency.) 6. Remove any solder bridges with desoldering wire. 7. Inspect the work with a magnifier.	Special soldering tips. Airblow nozzles 	Do not reuse removed parts. Use care to avoid solder bridges. Remove any that occurs. Remove the old IC carefully so as not to damage the circuit pattern. Because of the many pins, cleanliness of the pattern is extremely important after removing the IC. Be very precise in positioning the IC. Soldering opposite pins first holds the IC in place and makes soldering the other pins easier. It is important to inspect the work with a magnifier. ICs (especially TSOP) are easily damaged by heat. Do not touch directly with the soldering iron.

* SMC: Surface Mounted Component

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

1.5 DISASSEMBLY OF CAMERA SECTION

Note: ***Three kinds of double-arrows in connection tables respectively show kinds of connectors/wires.***

⬌ : Board-to-Board connector
⇔ : Flat wire
↔ : Wire

1.5.1 Operation unit

1. Remove four screws Ⓒ, and lift the operation unit in the direction of the arrow to remove it after disconnecting the connector ①, ②.

Connector	No.of pins	Connection
①	12	OPERATION(DECK) CN1 ⬌ 01 VTR CN5
②	5	OPERATION(DECK) CN2 ⇔ 17 JUNCTION CN2

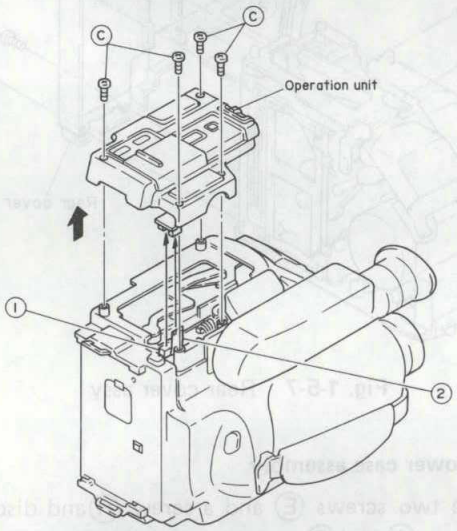


Fig. 1-5-1 Operation unit

1.5.2 Electronic viewfinder

1. Remove two screws Ⓒ and disconnect the connector ① to remove Electronic viewfinder.

Connector	No.of pins	Connection
①	7	Electronic viewfinder ↔ 01 VTR CN12

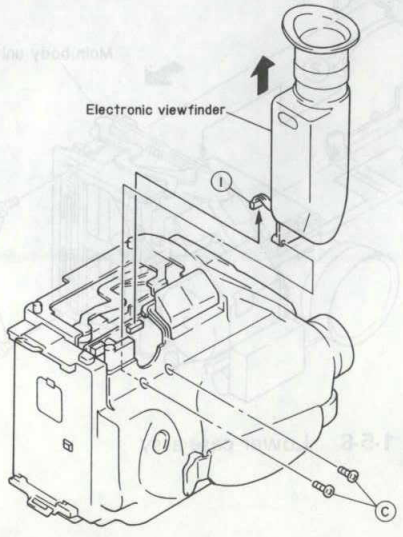


Fig. 1-5-2 Electronic viewfinder

1.5.3 Cassette cover assembly, Front panel assembly

1. Remove the Cassette holder lock button from cassette cover assembly.
2. Remove two screws Ⓐ and slide cassette cover assembly in the direction of the arrow and it becomes free from the main body unit.

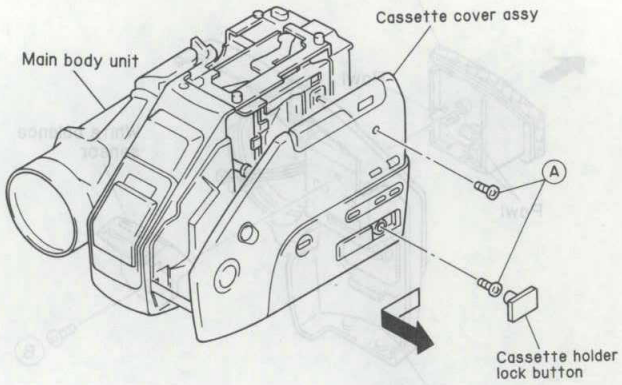


Fig. 1-5-3 Cassette cover assy

3. Remove screw Ⓓ, three screws Ⓒ and two screws Ⓠ.
4. Slide the hood assembly in the direction of the arrow ⓐ and remove it in the direction of the arrow ⓑ.
5. Move the front panel assembly in the direction of the arrow Ⓒ and disconnect the connectors ①, ②, ③ and ④.
6. Move the cassette cover assembly in the direction and disconnect the connector ⑤. Then, the Main body unit can be separated completely.

Connector	No.of pins	Connection
①	2	MIC UNIT ⟷ 02 JACK CN3
②	7	AUTO WHITE SENSOR ⟷ 11 CPU CN15
③	2	16 TALLY CN2 ⟷ 02 JACK CN4
④	2	16 TALLY CN1 ⟷ CPU PWB WIRE
⑤	4	07 OPERATION(CAMERA) ⇔ 17 JUNCTION CN1

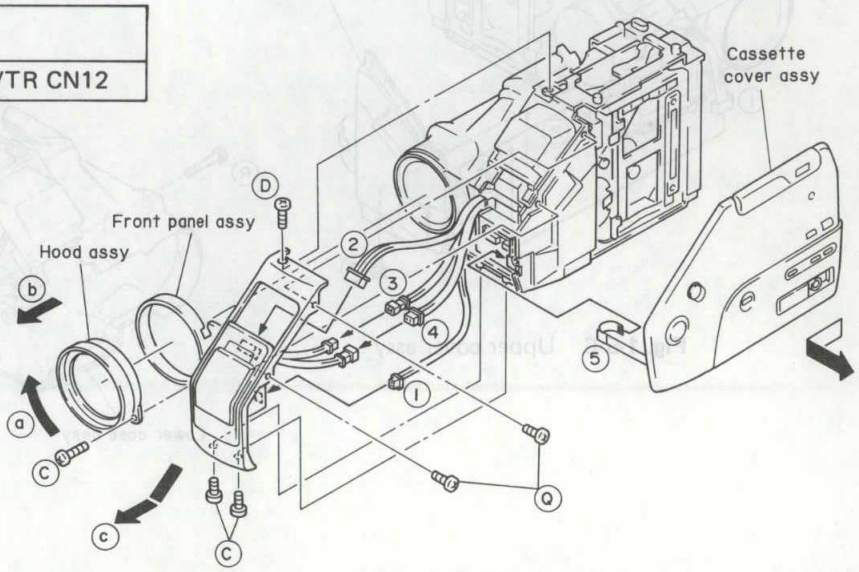


Fig. 1-5-4 Front panel assy, Cassette cover assy

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

1.5.4 Microphone unit, White balance sensor

1. Remove a screw Ⓑ to remove white balance sensor.
2. Remove the microphone unit, release it from locking by three pawls and move it in the direction of the arrow.

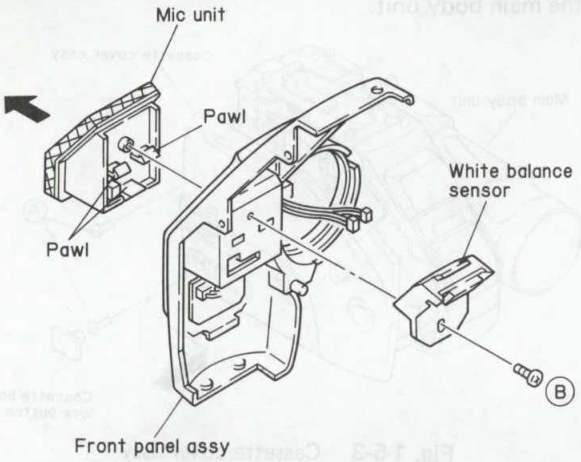


Fig. 1-5-5 Mic unit, W.B. sensor

1.5.5 Upper cover assembly

1. Remove a screw Ⓠ and disconnect the connectors ① and ② to remove upper cover assembly.

Con-nector	No.of pins	Connection
①	9	17 JUNCTION CN3 ⟷ CPU PWB WIRE
②	5	17 JUNCTION CN2 ⟺ OPERATION (DECK) CN2

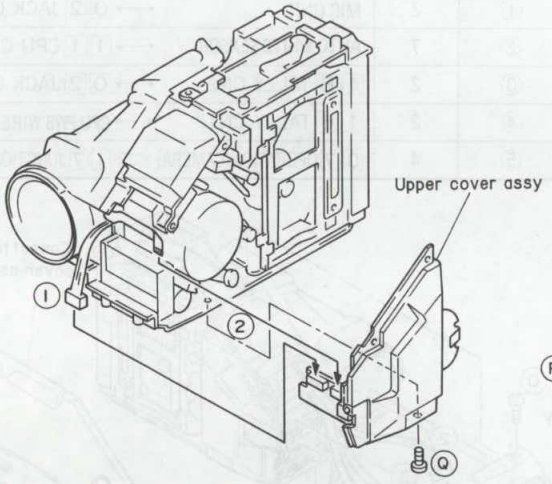


Fig. 1-5-6 Upper cover assy

1.5.6 Rear cover assembly

1. Remove four screws Ⓑ and two screws Ⓒ and disconnect connectors ① and ② to remove rear cover assembly.

Con-nector	No.of pins	Connection
①	3	18 REAR CN2 ⟷ LIGHT SHOE ASSY
②	11	18 REAR CN1 ⟷ CPU PWB WIRE

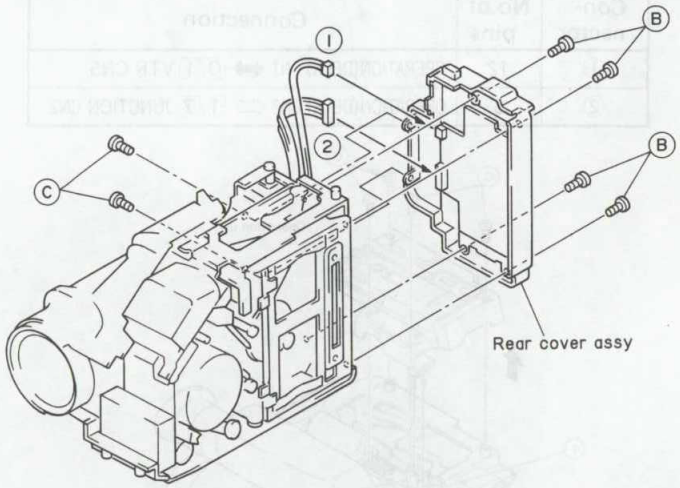


Fig. 1-5-7 Rear cover assy

1.5.7 Lower case assembly

1. Remove two screws Ⓔ and a screw Ⓡ and disconnect connectors ① and ② to remove lower case assembly.

Con-nector	No.of pins	Connection
①	3	15 AF CN55 ⟷ ZOOM SWITCH
②	3	01 VTR CN17 ⟷ 05 TRIGGER CN1

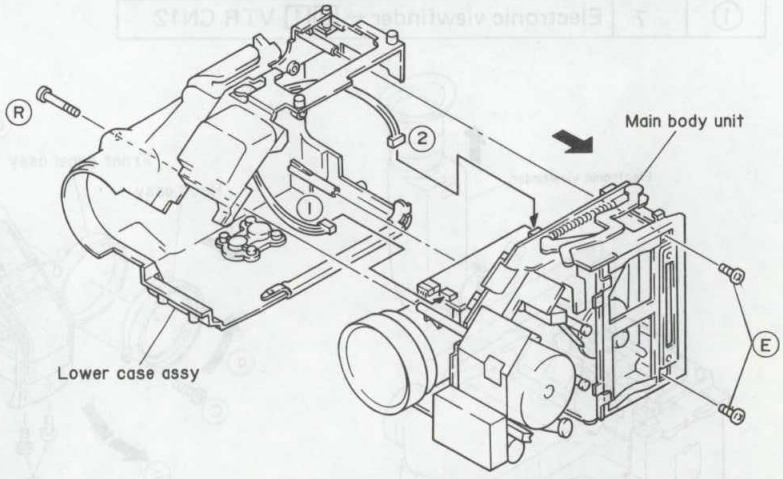


Fig. 1-5-8 Lower case assy

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

1.5.8 Camera section

1. Remove a screw Ⓔ and disconnect the connectors ①, ②, ③, ④ and ⑤ to remove camera section.

Con-nector	No.of pins	Connection
①	16	01 VTR CN14 ⟷ 11 CPU CN11
②	10	01 VTR CN15 ⟷ 12 VIDEO CN21
③	9	11 CPU CN16 ⟷ CPU PWB WIRE
④	4	15 AF CN59 ⟷ CPU PWB WIRE
⑤	8	01 VTR CN1 ⟷ CPU PWB WIRE

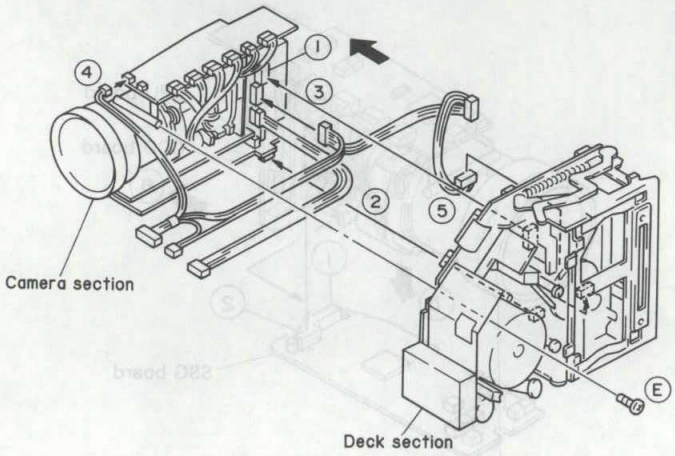


Fig. 1-5-9 Camera section

1.5.9 Hookup for inspection and adjustment of camera section

After detaching the camera section and deck section from each other, connect the following patch cords as shown in Fig. 1-5-10 for the purpose of inspection and adjustment of the camera section.

Con-nector	No.of pins	PART No.	Connection
①	9	PEMCJ0793A-9	18 REAR CN1 ⟷ CPU PWB WIRE
②	9	PEMCJ0793A-9	17 JUNCTION CN3 ⟷ CPU PWB WIRE
③	12	YUJ41361B-12	OPERATION(DECK) CN1 ⟷ 01 VTR CN5
④	7	YUJ40095A-7	11 CPU CN15 ⟷ AUTO WHITE SENSOR
⑤	5	YTU94032A-5	17 JUNCTION CN2 ⟺ OPERATION(DECK) CN2

Note: *For auto focus adjustment, refer to the connection shown in Fig. 3-4-1 (Section 3.4).*

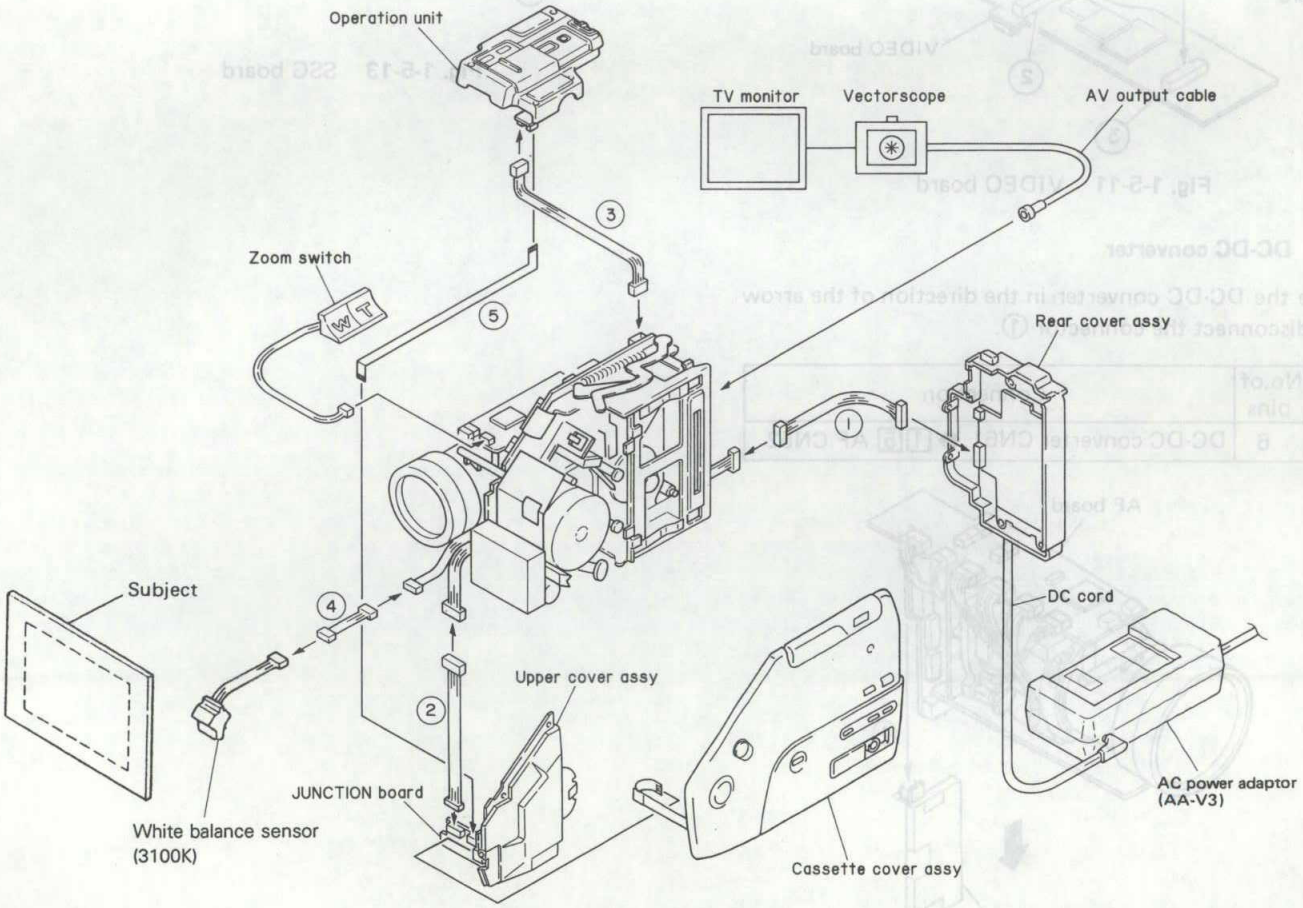


Fig. 1-5-10 Setup for inspection and adjustment of camera section

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

For replacement of the CCD image sensor and the OP block as the next step of the adjustment procedure, remove the following boards.

Note: ***Since the structure of all boards of the camera section is the board-to-board connector (1 mm pitch), carefully remove each board so as not to damage it.***

1.5.10 VIDEO board

1. Move the VIDEO board in the direction of the arrow and disconnect the connectors ①, ② and ③.

Connector	No.of pins	Connection
①	8	1 2 VIDEO CN23 ⬌ DC-DC converter CN62
②	30	1 2 VIDEO CN22 ⬌ 1 1 CPU CN12
③	30	1 2 VIDEO CN24 ⬌ 1 3 SSG CN32

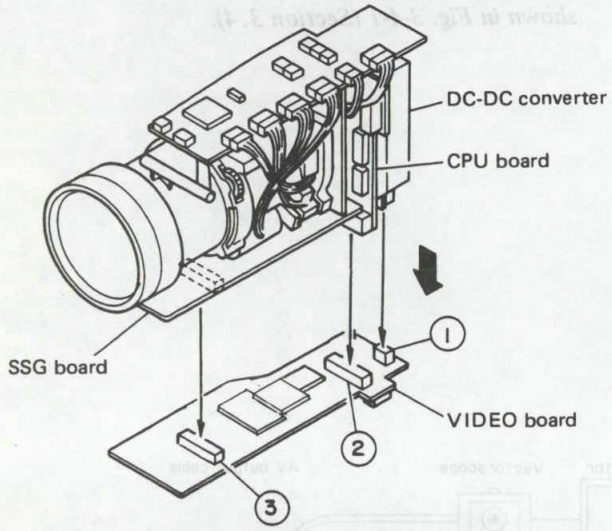


Fig. 1-5-11 VIDEO board

1.5.11 DC-DC converter

1. Move the DC-DC converter in the direction of the arrow and disconnect the connector ①.

Connector	No.of pins	Connection
①	6	DC-DC converter CN61 ⬌ 1 5 AF CN52

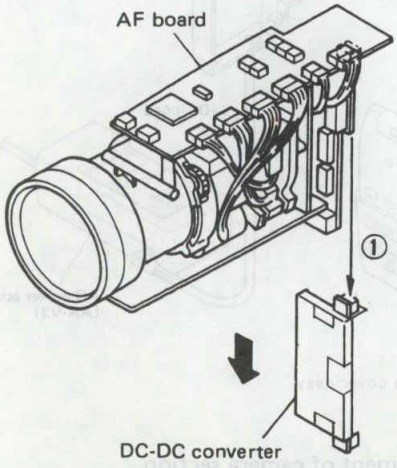


Fig. 1-5-12 DC-DC converter

1.5.12 SSG board

1. Remove a screw Ⓢ.
2. Move the CPU board in the direction of the arrow ⓐ, and disconnect the connector ①.
3. Move the SSG board in the direction of the arrow ⓑ, and disconnect the connector ②.

Connector	No.of pins	Connection
①	14	1 3 SSG CN31 ⬌ 1 1 CPU CN13
②	16	1 3 SSG CN33 ⬌ 1 4 CCD CN41

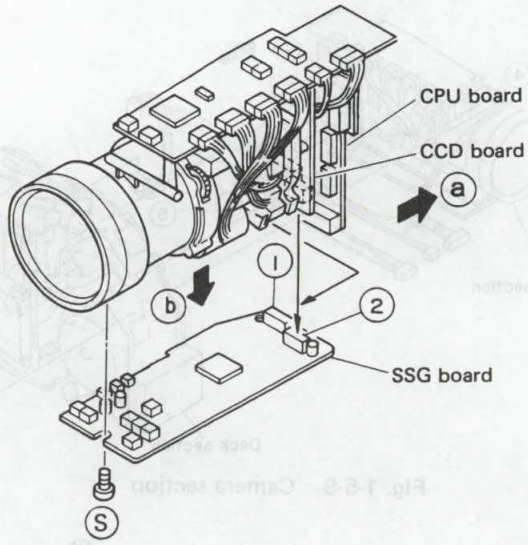


Fig. 1-5-13 SSG board

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

1.5.13 AF board

1. Remove two screws Ⓣ.
2. Disconnect the connectors ① to ⑥.

Con-nector	No.of pins	Connection
①	3(W)	1 5 AF CN57 ↔ Zoom encoder
②	4(Y)	1 5 AF CN58 ↔ Infinite sensor
③	4(W)	1 5 AF CN60 ↔ Iris motor
④	4(R)	1 5 AF CN53 ↔ Hall element
⑤	2(W)	1 5 AF CN56 ↔ Zoom motor
⑥	4(B)	1 5 AF CN54 ↔ AF motor

W : White Y : Yellow R : Red B : Black

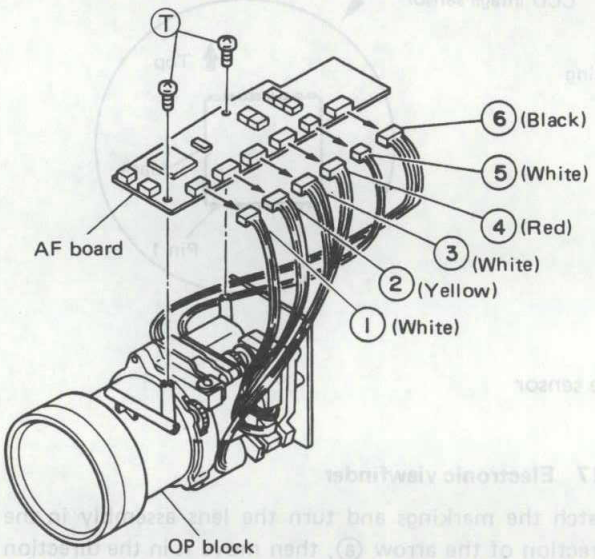


Fig. 1-5-14 AF board

1.5.14 CCD board

1. Remove two screws Ⓕ.
2. Move the CCD board in the direction of the arrow. At that time, pay careful attention to pins of the CCD image sensor so as not to damage them.

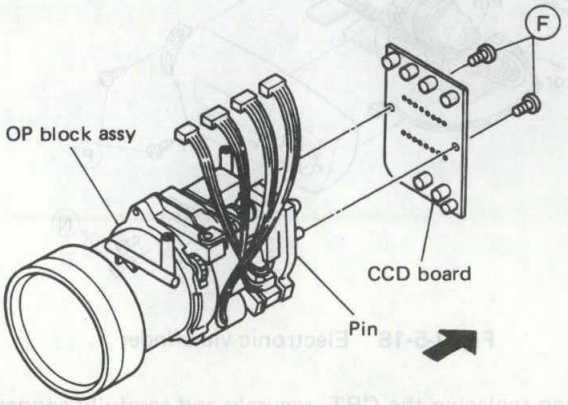


Fig. 1-5-15 CCD board

1.5.15 Replacement of CCD image sensor

Note:

- ***Pay the most careful attention to the transparent glass and optical filters of the CCD image sensor so as not to soil and damage them. If something is soiled with fingerprints, etc., gently clean it with silicone-processed paper/cloth or chamois.***
- ***When the CCD image sensor is shipped from the factory, there are protection seals applied onto the transparent glass. Leave the protector as it is, and take it off just before assembling the CCD image sensor to the OP block.***

- **Removal of CCD image sensor**

1. Remove two screws Ⓖ securing the imager holder.
2. Remove two screws Ⓗ securing the filter holder, and disassemble the optical filter, spacer rubber, and CCD image sensor from the holder.

- **Installation of new CCD image sensor**

1. Remove the protection seal from a new CCD image sensor and set it on the imager holder. Next, put the spacer rubber, optical filter, filter holder on the CCD image sensor as they are piled up in this order. At that time, make sure of orientation of each item referring to the following table (see Fig. 1-5-16).

Parts Name	Orientation
Imager holder	Parts No. is upside-down viewed as indicated by the arrow ⓐ.
CCD image sensor	Mark is on the right viewed as indicated by the arrow ⓐ.
Spacer rubber	IC side is horizontal.
Optical filter	Marking orientates toward downside of OP block.

2. Next, fix the filter holder to the imager holder with the two screws Ⓗ.
3. Fix the imager holder to the OP block with the two screws Ⓖ. At that time, be careful of the orientation.
4. After completion of the CCD image sensor replacement and reassembly of all P.C. boards to the camera section, observe the monitor to confirm no vignetting caused by the bodytube, rings, lens hood, etc. If no vignetting is observed, it can be said that image's parallel, horizontality and centering are correct.
5. After all of the above steps, perform the Auto Focus Adjustment described in Section 3.4.

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

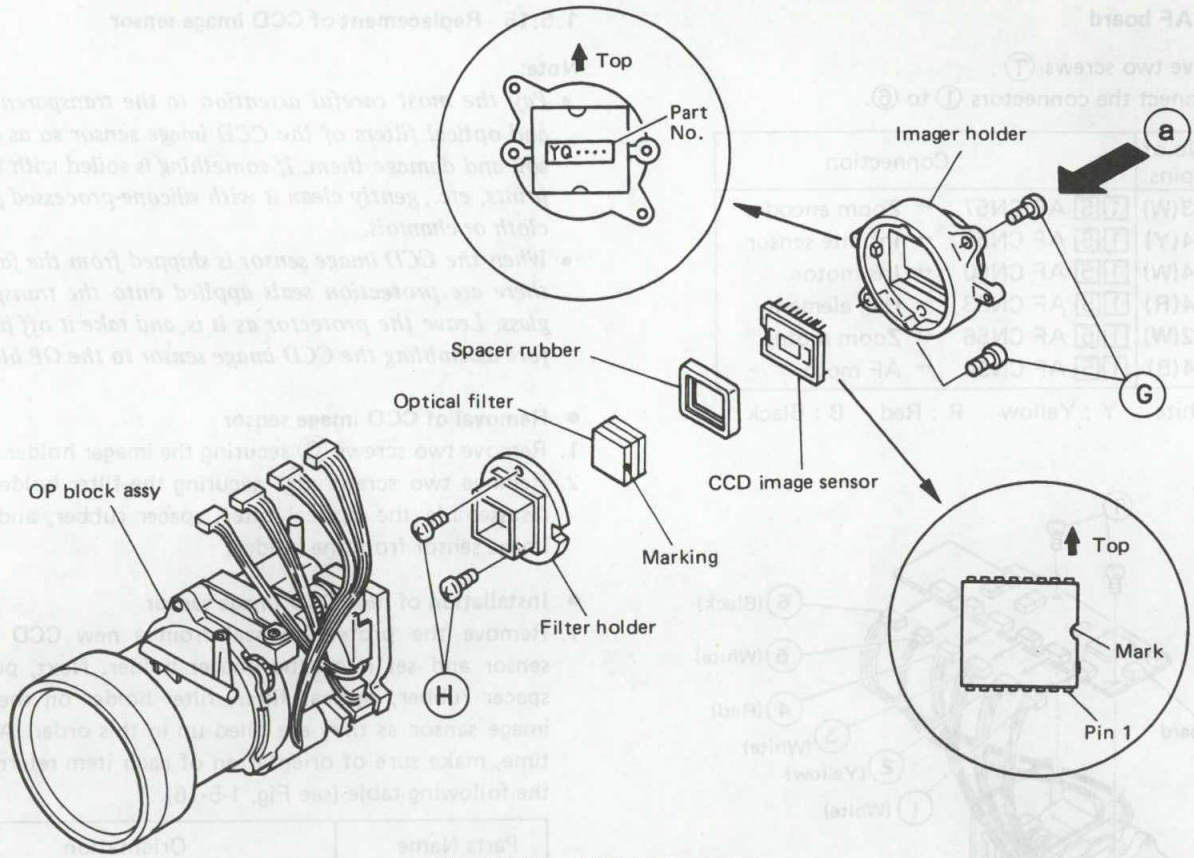


Fig. 1-5-16 CCD image sensor

1.5.16 OP (optical) block assembly

After removal of the imager holder (Section 1.5.15), replace the OP block assembly.

- **Zoom motor assembly**

1. Remove two screws Ⓘ.

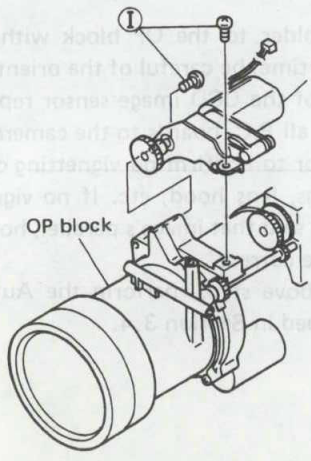


Fig. 1-5-17 Zoom motor assembly

Note: *After the OP block assembly and the zoom motor assembly are replaced, perform the Auto Focus Adjustment of Section 3.4.*

1.5.17 Electronic viewfinder

1. Match the markings and turn the lens assembly in the direction of the arrow ⓐ, then move it in the direction of the arrow ⓑ to remove lens assy.
2. Remove three screws Ⓟ, two screws Ⓝ and O Ring.

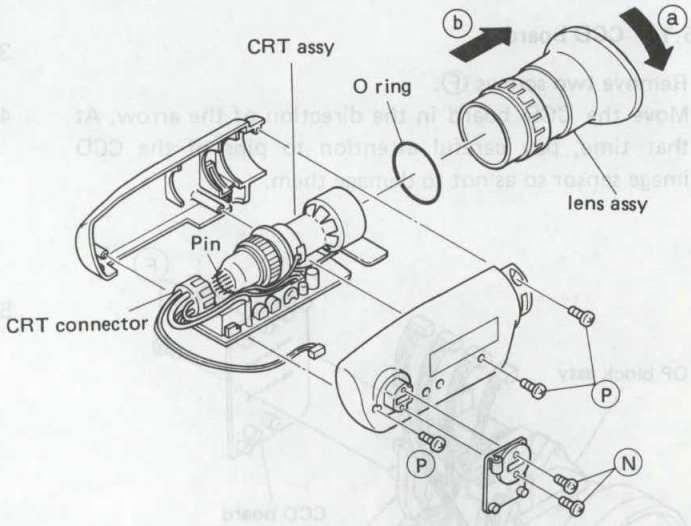


Fig. 1-5-18 Electronic viewfinder

3. When replacing the CRT, securely and carefully connect withe the CRT connector being careful not to bend or damage pins of the CRT.

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

1.6 DISASSEMBLY OF DECK SECTION

Note: *Three kinds of double-arrows in connection tables respectively indicate kinds of connectors/wires.*

⬌ : Board-to-Board connector
⇔ : Flat wire
↔ : Wire

1.6.1 Hookup for inspection and adjustment of deck section

After detaching the camera section and deck section from each other according to Section 1.5.8, connect the following patch cords as shown in Fig. 1-6-1 for the purpose of inspection and adjustment of the deck section.

Connector	No. of pins	Parts Number	Connection	
①	9	PEMCJ0793A-9	18 REAR CN1	↔ CPU PWB WIRE
②	12	YUJ41361B-12	OPERATION (DECK) CN1	⬌ 01 VTR CN5
③	4↔12	YUJ41358B-12T	Y/C separator cable	⬌ 01 VTR CN15
④	3	YUJ40095A-3	01 VTR CN17	↔ 05 TRIGGER CN1

Free service manuals
Gratis schema's
Digitized by
www.freeservicemanuals.info

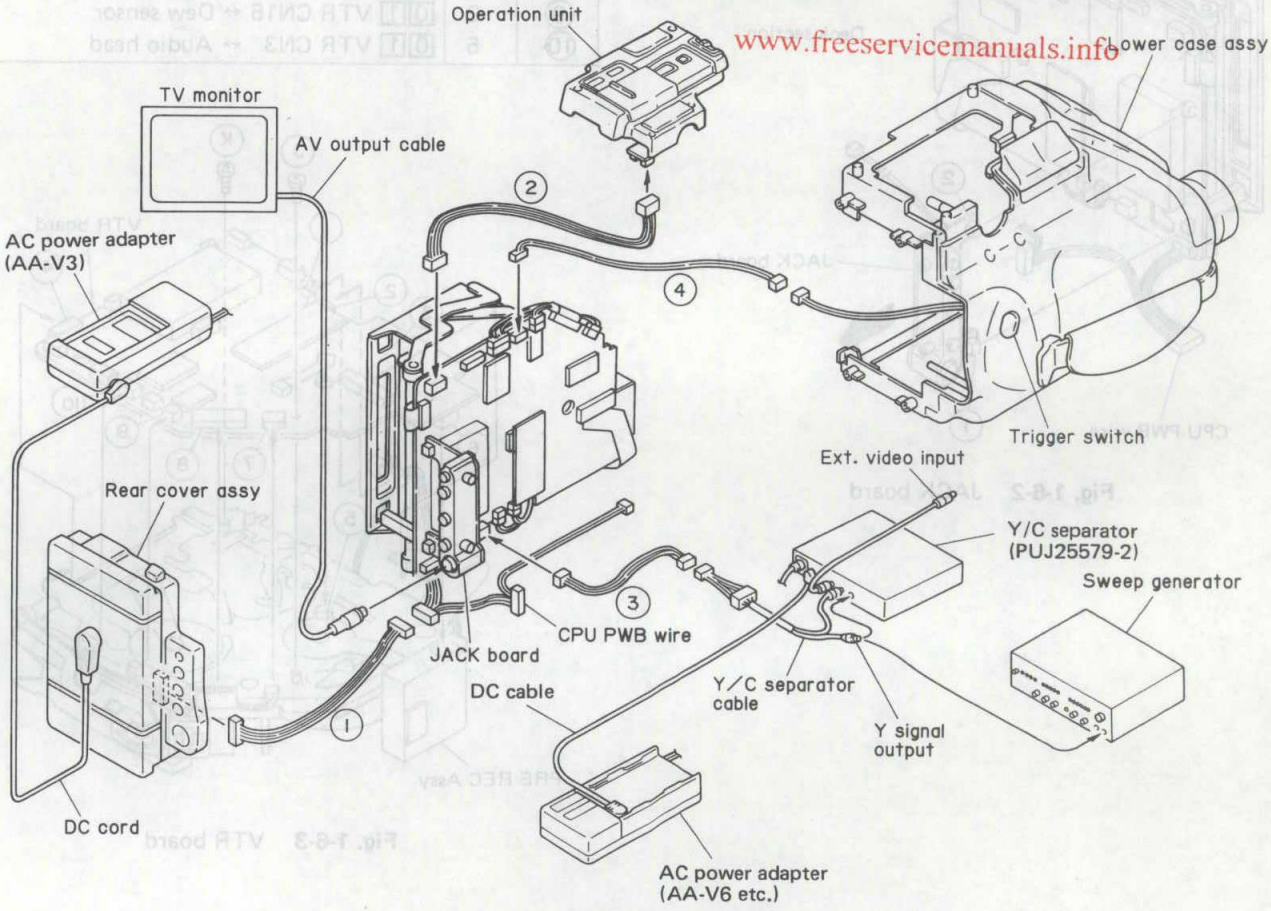


Fig. 1-6-1 Hookup for inspection and adjustment of deck section

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

For inspection and adjustment of phase of the mechanism, remove P.C. boards from the deck section.

1.6.2 JACK board

1. Move the JACK board in the direction of the arrow, and disconnect the connectors ① and ②.

Con-nector	No.of pins	Connection
①	6	01 VTR CN2 ⬌ 02 JACK CN1
②	6	01 VTR CN19 ⬌ 02 JACK CN2

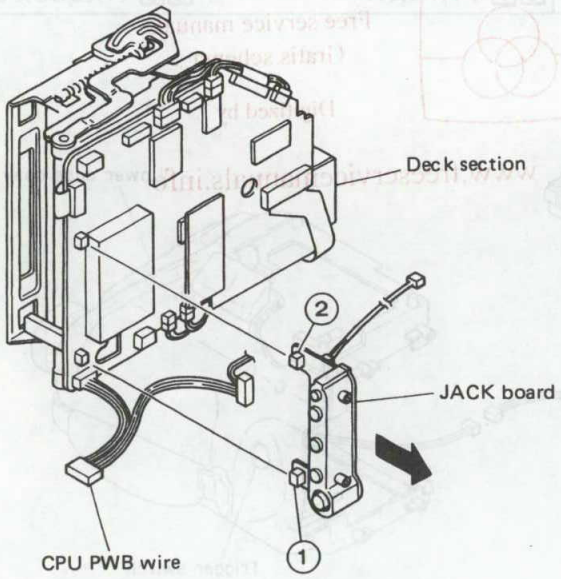


Fig. 1-6-2 JACK board

1.6.3 VTR board

1. Remove a screw Ⓙ and a screw Ⓚ.
2. Disconnect connectors ①, ②, ③, ④, ⑤ and ⑥. Then, the VTR board can be opened.
3. Disconnect connectors ⑦, ⑧, ⑨ and ⑩. Then, the VTR board can completely be removed.

Con-nector	No.of pins	Connection
①	2	01 VTR CN18 ↔ End sensor
②	2	01 VTR CN9 ↔ Mode control motor
③	15	01 VTR CN8 ⬌ Drum motor
④	7	01 VTR CN4 ⬌ 04 SENSOR
⑤	6	01 VTR CN13 ⬌ Flying erase head
⑥	14	01 VTR CN10 ⬌ 03 PRE REC CN1
⑦	4	01 VTR CN6 ↔ Control head
⑧	15	01 VTR CN7 ⬌ Capstan motor
⑨	2	01 VTR CN16 ↔ Dew sensor
⑩	5	01 VTR CN3 ↔ Audio head

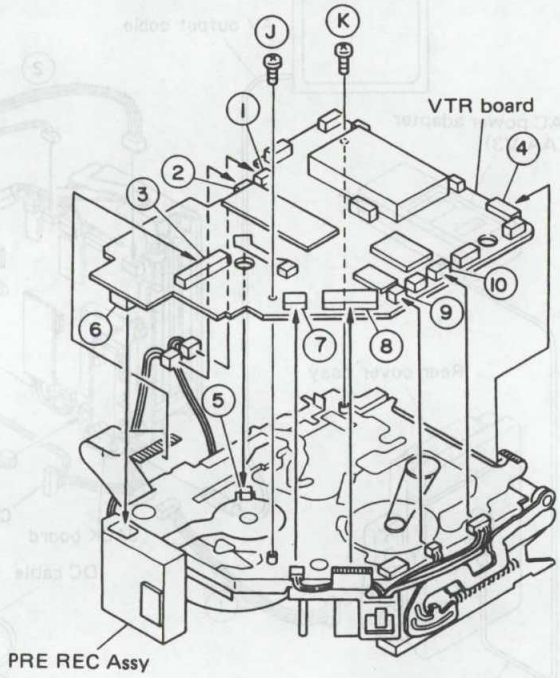


Fig. 1-6-3 VTR board

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

1.6.4 PRE REC ASSY

1. Draw the CONNECTOR board out in the direction of the arrow (see Fig. 1-6-4).
   At that time, pay attention to 10 pins of the drum terminal so as not to bend and damage them.
2. Remove a screw (J) and remove the PRE REC Assy from the deck section.

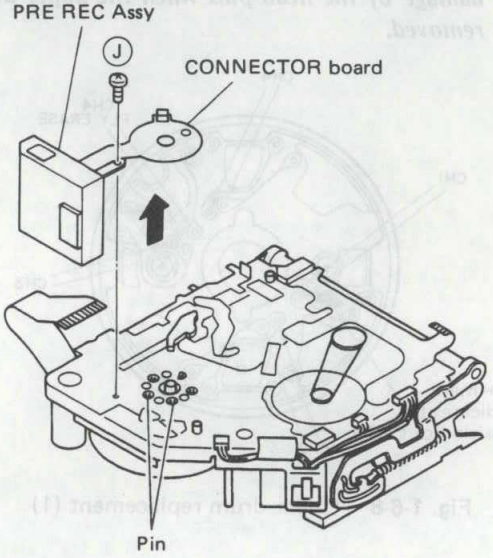


Fig. 1-6-4 PRE REC Assy

1.6.5 SENSOR board

1. Remove three screws (J) and disconnect the connector ①.

Connector	No.of pins	Connection
①	3	0 4 SENSOR CN1 ⬌ Camera switch

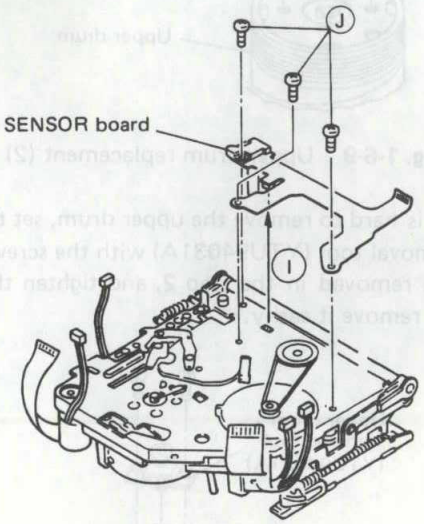


Fig. 1-6-5 SENSOR board

1.6.6 Replacement of cassette housing

1. After detaching the deck section from the camera section in the procedure of Section 1.5.8, move the lock plate in the direction of the arrow (a) to set the cassette housing to the Eject mode.

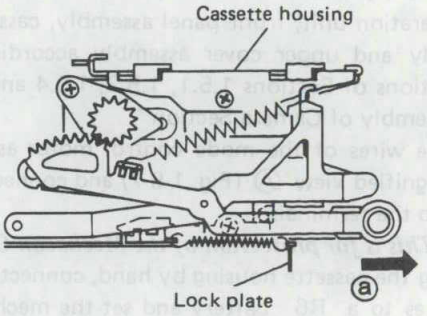


Fig. 1-6-6A Cassette housing - 1

2. Remove two screws (J).
3. Open both arms of the cassette housing in the directions of the arrow (b) to make them come out of the guide rail of the main deck.
4. Remove the cassette housing in the direction of the arrow (c).

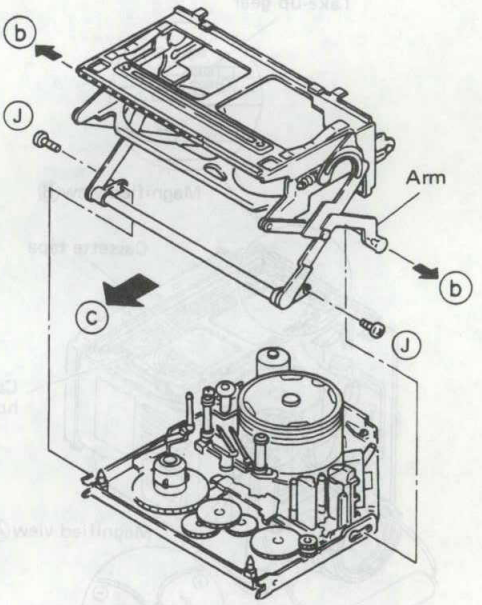


Fig. 1-6-6B Cassette housing - 2

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

1.6.7 To take out cassette tape

When the deck enters the Emergency mode with a cassette tape loaded and it cannot be ejected by pressing the EJECT button, take the cassette tape out of the cassette housing according to the following procedure.

1. Disconnect the deck from the power source and remove the operation unit, front panel assembly, cassette cover assembly and upper cover assembly according to the descriptions of Sections 1.5.1, 1.5.3, 1.5.4 and 1.5.5 of "Disassembly of Camera Section".
2. Remove wires of the mode control motor as shown in the magnified view Ⓐ (Fig. 1-6-7) and connect jumping wires to the terminals.
   Note: ***This is for protection of the Mechacon CPU.***
3. Holding the cassette housing by hand, connect the jumping wires to a R6 battery and set the mechanism for Unloading as it is in the Eject mode. In this condition, turn the take-up gear (see the magnified view Ⓑ) in the direction of the arrow ⓐ (toward the drum) to wind the tape. Checking up whether the tape is damaged or not, stop holding of the cassette housing by hand.
   Note: ***If the mechanism comes into the unloading mode as the cassette tape is not held by hand, it results in tape damage.***

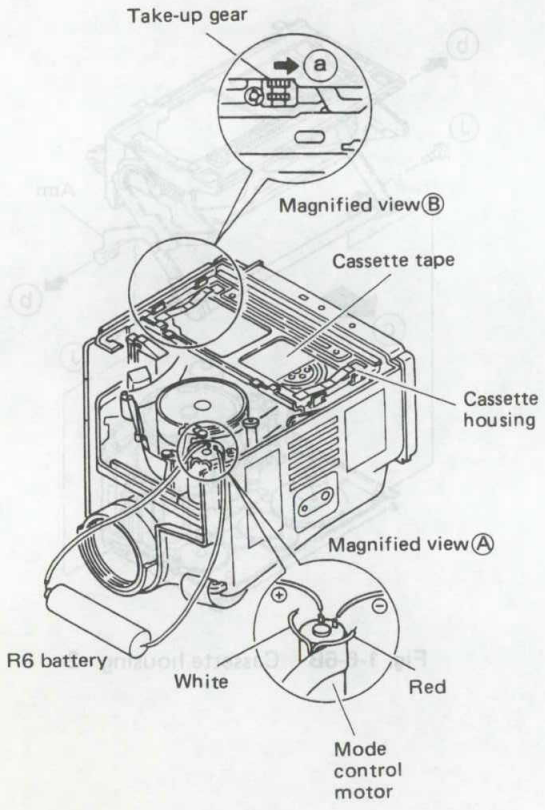


Fig. 1-6-7 To take out cassette tape

1.6.8 Replacement of upper drum

Note: ***Be very careful not to touch any head of a new upper drum as well as not to damage the drum.***

- **Removal**

1. Carefully unsolder at 10 points shown in Fig. 1-6-8 on the UPPER DRUM board.
   Note: ***If solder is not completely removed, it may cause damage of the head pins when the upper drum is removed.***

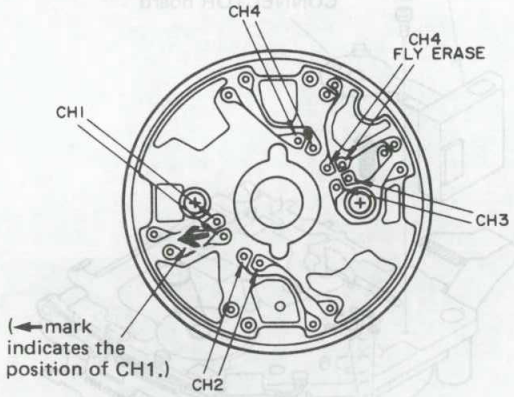


Fig. 1-6-8 Upper drum replacement (1)

2. Remove two screws and draw out the upper drum in the direction of the arrows.

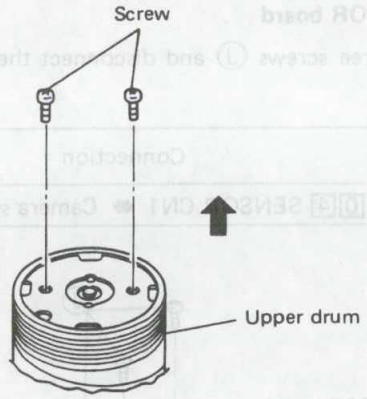


Fig. 1-6-9 Upper drum replacement (2)

3. When it is hard to remove the upper drum, set the upper drum removal tool (YTU94031A) with the screws which are once removed in the step 2, and tighten the center screw to remove it easily.

Fig. 1-6-10 Upper drum replacement (3)

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

- **Installation**

1. Before installing a new upper drum, insert a soldering iron (50 W) into the hole of the upper drum and heat it for about 3 to 5 minutes to expand it.

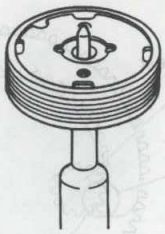


Fig. 1-6-11 Upper drum replacement (4)

2. Set the upper drum so that its hole A and the hole B of the lower drum are positioned oppositely (180°) in a line, and temporarily tighten the two screws.

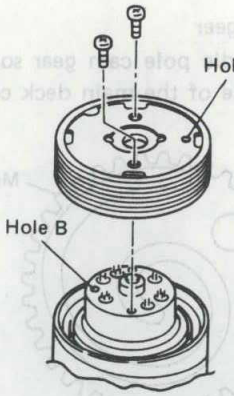


Fig. 1-6-12 Upper drum replacement (5)

3. Tighten the screws lightly first, then, alternately tighten them gradually as the upper drum is cooled.
4. After replacement finishes, make sure to check up and adjust the following items.
   - Servo and interchangeability
   - Luminance (Y) signal circuit
   - Color (C) signal

1.6.9 Checkup and adjustment of mechanism phase

Note: ***Pay careful attention to the installing order and phase of mechanism parts of the loading system.***

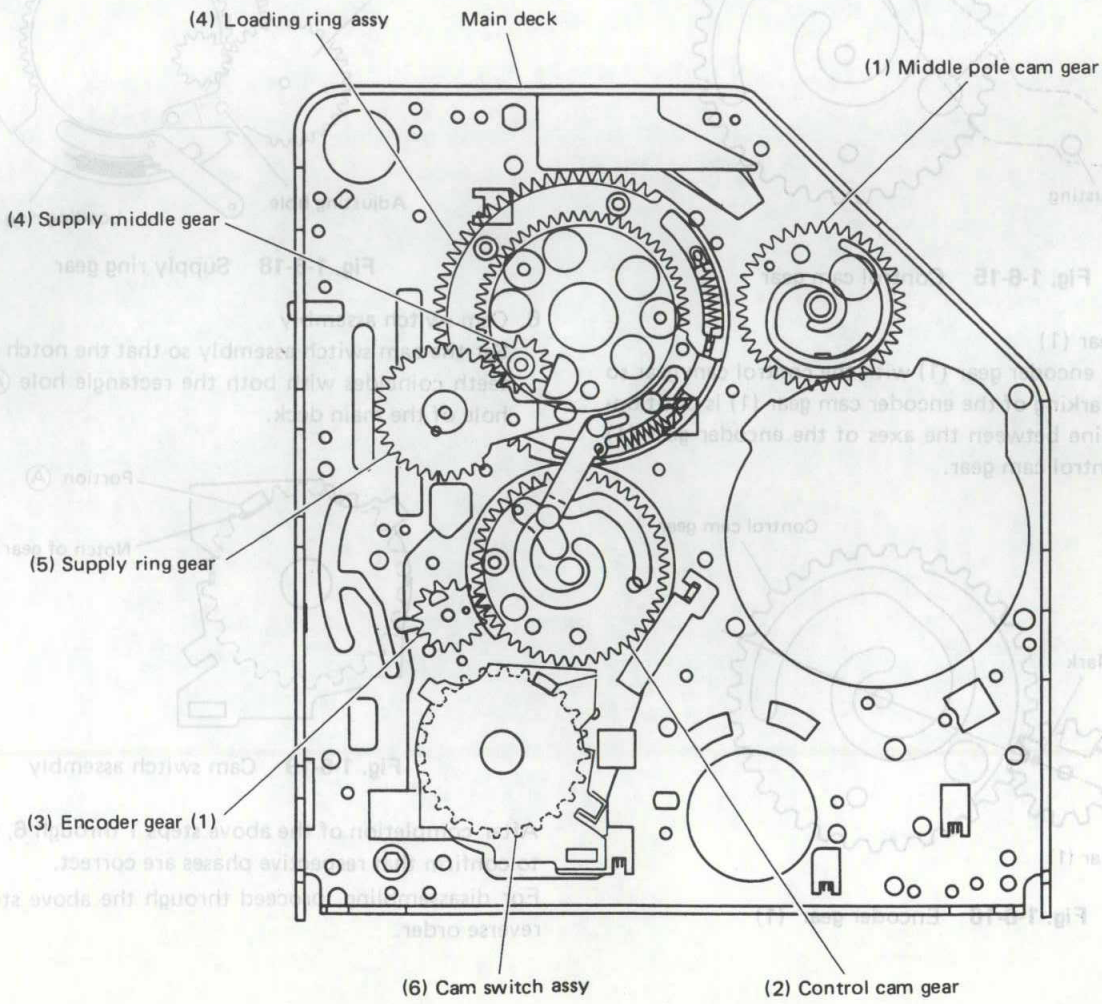


Fig. 1-6-13 Phase adjustment of loading system

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

1. Middle pole cam geer
   Position the middle pole cam gear so that its adjusting hole and the hole of the main deck coincide with each other.

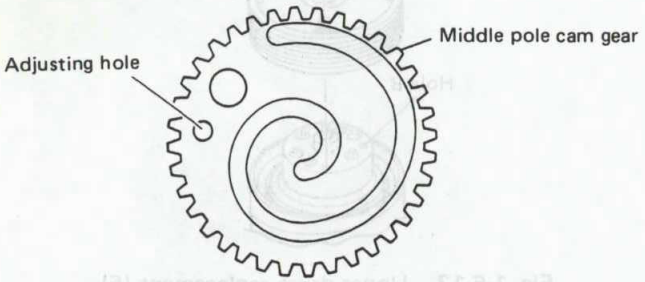


Fig. 1-6-14 Middle pole cam gear

2. Control cam gear
   Position the control cam gear so that its adjusting hole and the hole of the main deck coincide with each other. At that time, confirm that the holes of the link (located on the back of the main deck) and the hole of the main deck coincide with each other.

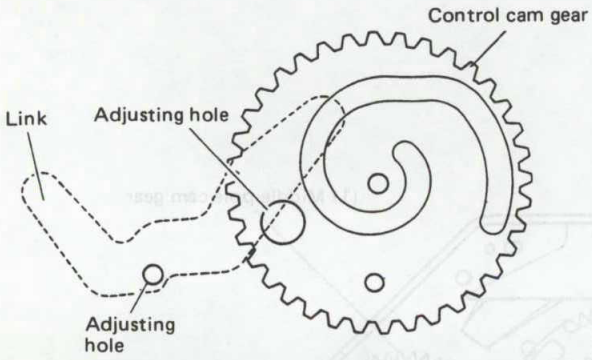


Fig. 1-6-15 Control cam gear

3. Encoder gear (1)
   Engage the encoder gear (1) with the control cam gear so that the marking of the encoder cam gear (1) is positioned in the line between the axes of the encoder gear (1) and the control cam gear.

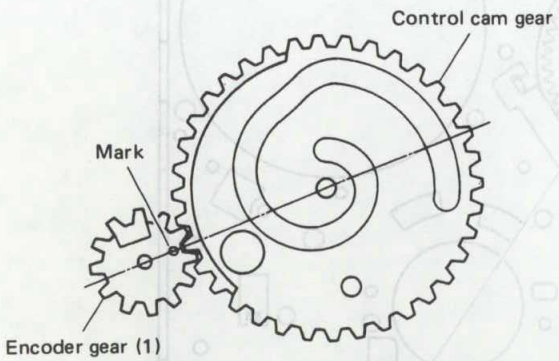


Fig. 1-6-16 Encoder gear (1)

4. Loading ring assembly, supply middle gear
   Engage the supply middle gear with the loading ring assembly so that two teeth of the supply middle gear and the internal first two teeth of the loading ring assy are gearing with each other.

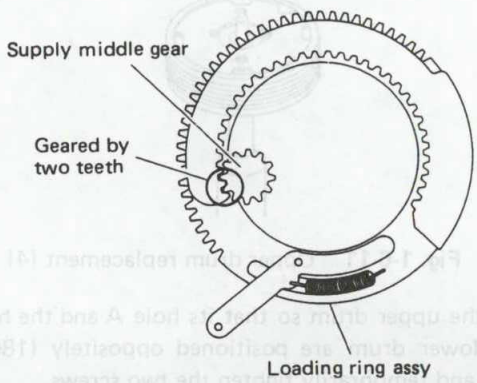


Fig. 1-6-17 Loading ring assy, supply middle gear

5. Supply ring gear
   Engage the supply ring gear so that its hole coincides with that of the loading ring assy.

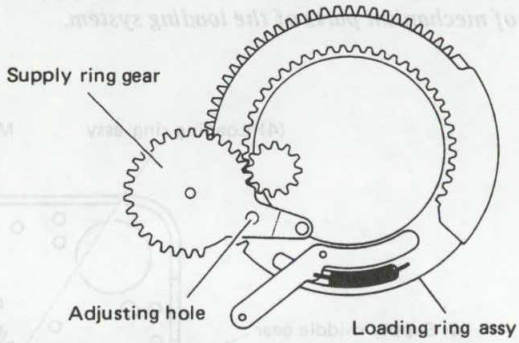


Fig. 1-6-18 Supply ring gear

6. Cam switch assembly
   Set the cam switch assembly so that the notch of its gear teeth coincides with both the rectangle hole Ⓐ and the hole of the main deck.

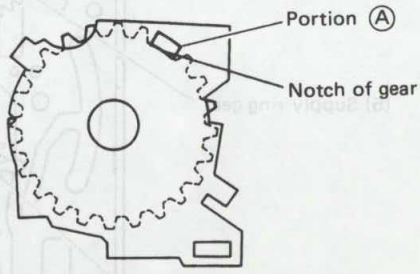


Fig. 1-6-19 Cam switch assembly

After completion of the above steps 1 through 6, make sure to confirm that respective phases are correct.
For disassembling, proceed through the above steps in the reverse order.

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

1.7 INSPECTION AND MAINTENANCE

Since this model is equipped with rotary parts and other parts which may wear as time passes, it is important to clean the tape transport system and rotary parts as well as oiling and greasing rotary parts.

Besides such maintenance, periodic replacement of worn and consumable parts is required.

Note: Encircled numeral(s) corresponds to the item number shown in Table 1-7-1.

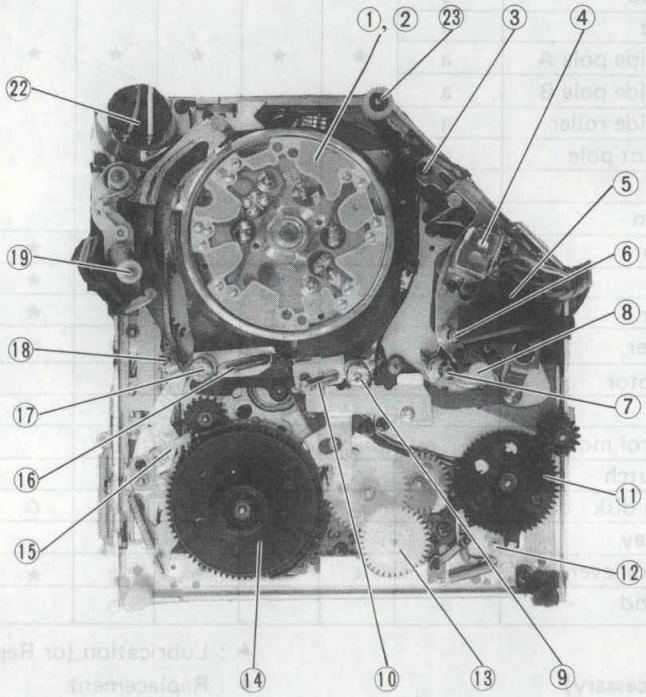


Fig. 1-7-1 Location of main mechanism parts (Top view)

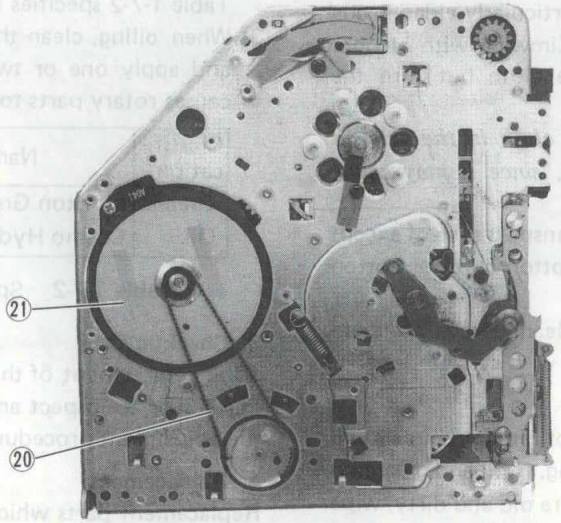


Fig. 1-7-2 Location of main mechanism parts (Bottom view)

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

1.7.1 Standard maintenance/inspection schedule of main components

Table 1-7-1 indicates the standard servicing period by component and kind of servicing. In practice, however, the indicated periods will widely vary according to environmental and using conditions. Nunfulfilment of the maintenance work not only shortens the standard period sharply but also influences other components badly.
Also be aware that rubber parts may possibly deform and age as time passes even when the set is not used.

System	Symbol No.	Parts Name	Assy	Periodic servicing schedule (operation hours)								
				250	500	750	1000	1250	1500	1750	2000	3000
Tape transport system	19	Impedance roller										
	16	Supply slant pole	a									
	17	Supply guide roller	a									
	18	Tension pole	a									
	7	Middle pole	a									
	6	Take-up guide pole A	a	★	★	★	★	★	★	★	★	★
	3	Take-up guide pole B	a									
	9	Take-up guide roller	a									
	10	Take-up slant pole	a									
	8	Capstan	a									
	2	Lower drum	a									
	1	Upper drum	a	★	★	☆	●	★	★	☆	●	●
	4	A/C head	a	★	★	★	★	★	★	★	★	●
	5	Pinch roller	a	★	★	★	★	★	★	★	★	●
	23	Head cleaner	a	○	○	○	●	○	○	○	●	●
Drive system	21	Capstan motor	a								●	
	20	Belt					○				●	○
	22	Mode control motor										●
	11	Take-up clutch	a	△	△	△	▲	△	△	△	▲	▲
	14	Supply reel disk	a	△	△	△	▲	△	△	△	▲	▲
	13	Center pulley	a				○				○	○
	12	Search brake lever		★	☆	★	☆	★	☆	★	☆	☆
Other	15	Tension band	a				○				○	○

★ : Cleaning
☆ : Cleaning (or Replacement if necessary)
△ : Lubrication
a : Will be provided as assembly parts for replacement
▲ : Lubrication (or Replacement if necessary)
● : Replacement
○ : Inspection or Replacement if required

Table 1-7-1 Maintenance schedule

1.7.2 Remarks

1. Cleaning

1) For cleaning of the upper drum (particularly video heads), use fine-woven cotton cloth or Kimwipe with alcohol soaks through. Do not move the cloth but turn the upper drum counterclockwise.
Note: ***Make sure not to move the cloth in the vertical direction to the video head, since it may cause damage of the video heads.***
2) For cleaning of parts of the tape transport system except the upper drum, use fine-woven cotton cloth or cotton swab soaked alcohol.
3) After cleaning, confirm that the cleaned parts are completely dry before loading the deck with cassette tape.

2. Applying oil and grease

1) Periodical oiling and greasing are not required but should be done to new parts when replacing. If oil and grease on the other parts of the other party are old and dirty, wipe them clean and apply new oil or grease.
2) For parts and points to apply oil and grease, refer to the exploded view of the mechanism assembly (M3).
Table 1-7-2 specifies oil and grease to be used.
3) When oiling, clean the objective parts with alcohol first and apply one or two drop(s) of oil. Too much oiling causes rotary parts to slip because of oil leakage.

Classification	Name	Part No.	Symbol in drawing
Grease	Moriton Grease No.1	MOS2-C	AA
Oil	Cosmo Hydro HV100	YTU94027	BB

Table 1-7-2 Specific oil and grease to be used

3. Checkup

After replacement of the supply reel disk and tension band, make sure to inspect and adjust back tension according to the adjustment procedure of the deck section.

4. Replacement

Replacement parts which are supplied as assembly parts are indicated by "a" in the "Assy" column of Table 1-7-1.
For respective parts numbers, refer to the parts list of the mechanism assembly.

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

SECTION 2
DECK SECTION ADJUSTMENT

2.1 PREPARATION

2.1.1 Precaution

In most cases the deck section is in need of electrical adjustment, it results from replacement of worn mechanical parts or video heads.
In the event of malfunction with electrical circuits, troubleshooting with the aid of proper test instruments must be done first, and then commence necessary repair, replacement and adjustment, etc.

1. When loading the deck with a cassette tape, make sure to remove the cassette door beforehand since it contacts with the drum as it is assembled.
2. In case of wiring to chip test points for measurement, use IC clips, etc. to avoid any stress.
3. Since connectors are fragile, carefully handle them in disconnecting and connecting.
4. To operate the deck section with the VTR board which is removed from the mechanism chassis, set the push switch (SW1) to ON.

2.1.2 Connection for adjustment

Disassemble the deck section from the other units, and connect it with test equipment as shown in Fig. 2-1-1.

Connector	No. of pins	Parts Number	Connection	
①	9	PEMCJ0793A-9	18 REAR CN1	↔ CPU PWB WIRE
②	12	YUJ41361B-12	OPERATION (DECK) CN1	⬌ 01 VTR CN5
③	4↔12	YUJ41358B-12T	Y/C separator cable	⬌ 01 VTR CN15
④	3	YUJ40095A-3	01 VTR CN17	↔ 05 TRIGGER CN1

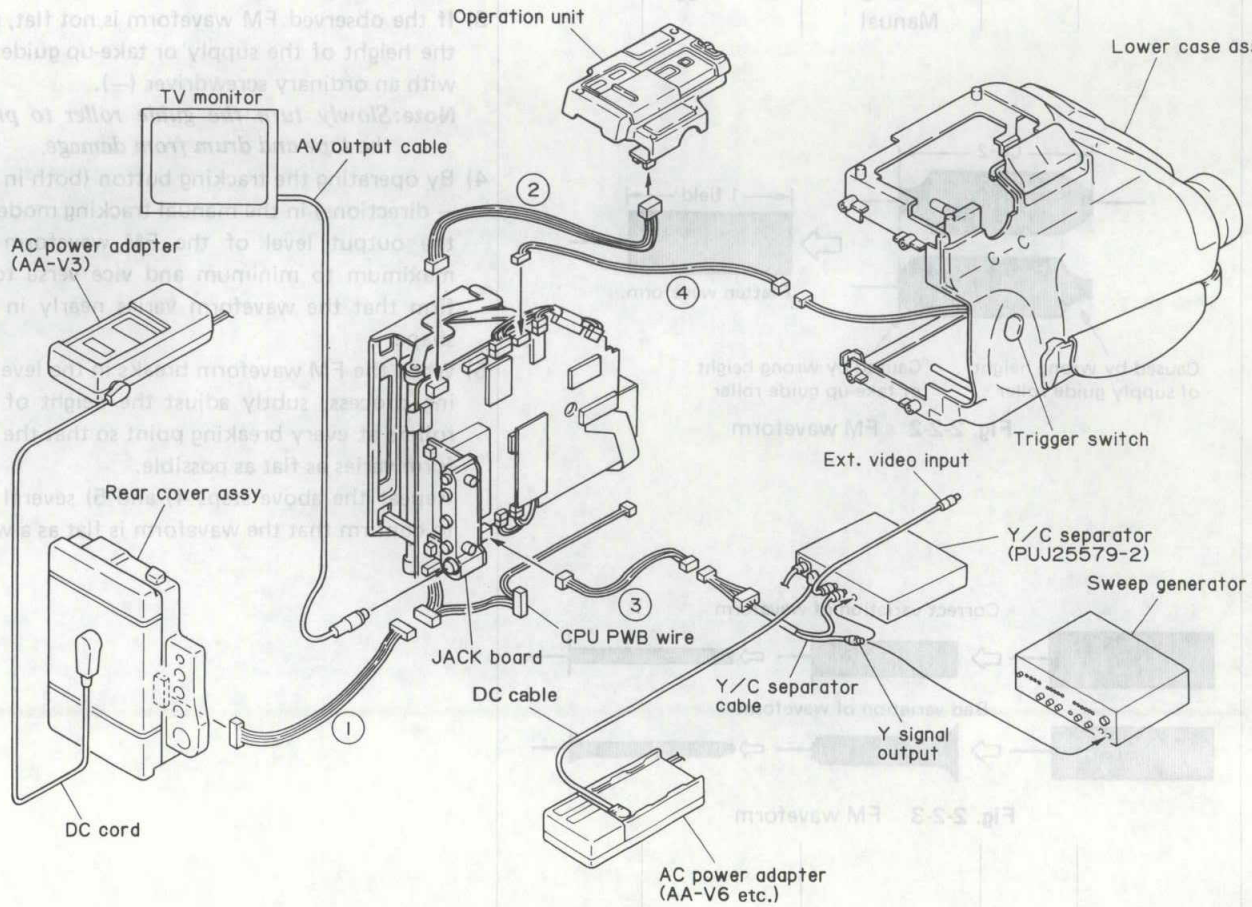


Fig. 2-1-1 Connection for inspection and adjustment of deck section

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

2.2 SERVO CIRCUIT AND INTERCHANGEABILITY

Notes:
- ***This adjustment must be performed after the upper drum assembly or the lower drum assembly is replaced.***
- ***Unless otherwise specified, measurement points and adjustment parts are located on [0][1] VTR board.***
- ***For adjustment of the EG version, use the SP stairstep signal of the alignment tape MHPE-C since they have not the LP mode.***

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
1	Back tension	• REC	• Cassette torque meter	• Cassette torque meter		1) Set a cassette torque meter onto the deck and measure the back tension in the standard REC mode to confirm that the back tension is 15–22. gf·cm. 2) If not, replace the tension band. When the value widely fluctuates in the measurement, replace the supply reel disk. 3) With the cassette torque meter, confirm that the play torque is 20–35 gf·cm. If necessary, replace the take-up clutch assy.
2	Tape pattern	• PB	• Alignment tape SP stairstep (MHPE-C) • Tracking: Manual	• CN11 pin1 (V FM) • CN11 pin 6 (V SW-A) (Ext.trigger)	• Supply/ Take-up guide roller	1) Observe signal at CN11 pin 1 with external trigger from CN11 pin 6. 2) Play back the SP stairstep signal of the alignment tape, and maximize the FM waveform by the tracking button. 3) If the observed FM waveform is not flat, adjust the height of the supply or take-up guide roller with an ordinary screwdriver (–). **Note:** ***Slowly turn the guide roller to prevent the tape and drum from damage.*** 4) By operating the tracking button (both in + and – directions) in the manual tracking mode, vary the output level of the FM waveform from maximum to minimum and vice versa to confirm that the waveform varies nearly in a flat shape. 5) When the FM waveform breaks in the level varying process, subtly adjust the height of guide rollers at every breaking point so that the waveform varies as flat as possible. Repeat the above steps 4) and 5) several times to confirm that the waveform is flat as a whole.

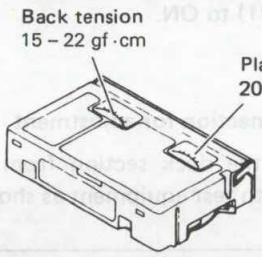


Fig. 2-2-1 Cassette torque meter

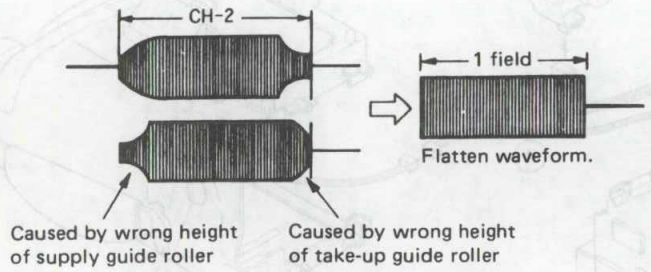

CH-2
1 field
Flatten waveform.
Caused by wrong height of supply guide roller
Caused by wrong height of take-up guide roller

Fig. 2-2-2 FM waveform

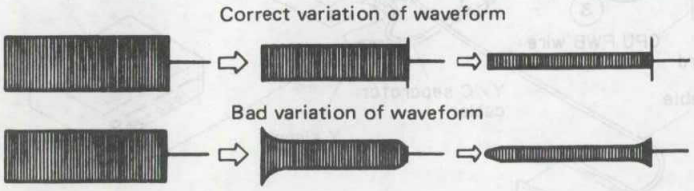


Fig. 2-2-3 FM waveform

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
		• REC ↓ PB	• Alignment tape LP stairstep (MHPE-LC) • SP/LP			6) Play the LP stairstep signal of the alignment tape and adjust the Tracking CTL to maximize the FM waveform. 7) Confirm, FM waveform variation is always flat. If necessary, repeat 3). 8) Record both in SP and LP modes and playback the signal to confirm that the FM waveform is flat in both modes. **Note:** ***If there is FM dropout at the supply side (tape inlet of the drum) in LP/SP REC-PB, check the back tension first and adjust the parallelism with the alignment tape for the best setting, and then turn the supply guide pole counterclockwise at an angle of 30° approx.*** 9) Through the above adjustments, make sure of no wrinkling/damage in the tape around the impedance roller and take-up guide pole in Loading/Unloading, Search Rewind, and at mode shift from Search Rewind to Play. If tape wrinkling or damage occurs around the take-up guide pole, adjust the contact (angle) of the audio/control head to transport the tape correctly along the lower flange of the guide pole.
3	A/CTL head height & azimuth	• PB	• Alignment tape SP stairstep (Audio 6 kHz) (MHPE-C or MH-C2)	• TP32 (AUDIO OUT)	• A/CTL head	1) Play back the SP 6 kHz segment of the alignment tape and observe waveform at TP32. **Note:** ***When the output level is approx. −6 dBs (1.1 Vp-p, 0.39 Vrms) and the level fluctuation is less than −2 dB, adjustment is not required.*** 2) If necessary, turn the screw Ⓐ (reference), Ⓑ (bent forward) and Ⓒ (azimuth) gradually (at an angle of 45° approx.) in the same direction to obtain the maximum output level. 3) As final fine adjustment, adjust the screw Ⓑ for minimum level fluctuation and the screw Ⓒ for maximum output level.

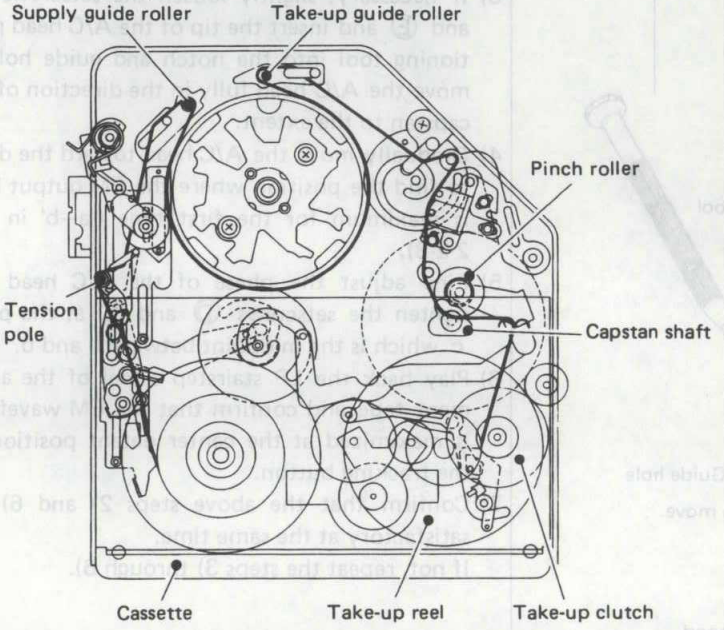


Fig. 2-2-4 Tape transport system

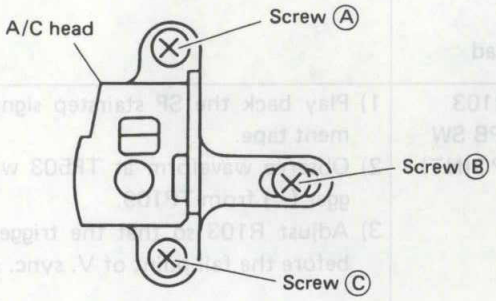


Fig. 2-2-5 A/C head

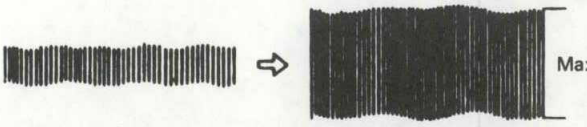


Fig. 2-2-6 Audio signal

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
4	Phase of control head (X value)	• PB	• Alignment tape SP stairstep (MHPE-C or MH-C2) • Tracking: Manual • Alignment tape LP stairstep (MHPE-LC)	• CN11 pin 1 (V FM) • CN11 pin 6 (V SW-A) (Ext.trigger)	• Control head	1) Play back the SP stairstep signal of the alignment tape and observe waveform at CN11 pin 1 with external trigger from CN11 pin 6. 2) Operate the tracking button in the manual tracking mode and confirm that the FM output level is maximum at the center position of the tracking button as shown in Fig. 2-2-8. 3) If necessary, slightly loosen the setscrews Ⓓ and Ⓔ and insert the tip of the A/C head positioning tool into the notch and guide hole to move the A/C head fully in the direction of the capstan to the extent. 4) Gradually move the A/C head toward the drum to find the position where the FM output level is maximum for the first time ('a–b' in Fig. 2-2-8). 5) Fine adjust the phase of the A/C head and tighten the setscrews Ⓓ and Ⓔ at the point c which is the midpoint between a and b. 6) Play back the LP stairstep signal of the alignment tape and confirm that the FM waveform is maximized at the center detent position of the tracking button. 7) Confirm that the above steps 2) and 6) are satisfactory at the same time. If not, repeat the steps 3) through 6).
5	PB switching point	• PB	• Alignment tape SP stairstep (MHPE-C or MH-C2) • Tracking: Manual	• TP503 (VIDEO OUT) • TP109 (DRUM FF) (Ext.trigger)	• R103 (PB SW POINT)	1) Play back the SP stairstep signal of the alignment tape. 2) Observe waveform at TP503 with external trigger (–) from TP109. 3) Adjust R103 so that the trigger point is 6.5H before the fall point of V. sync. signal.

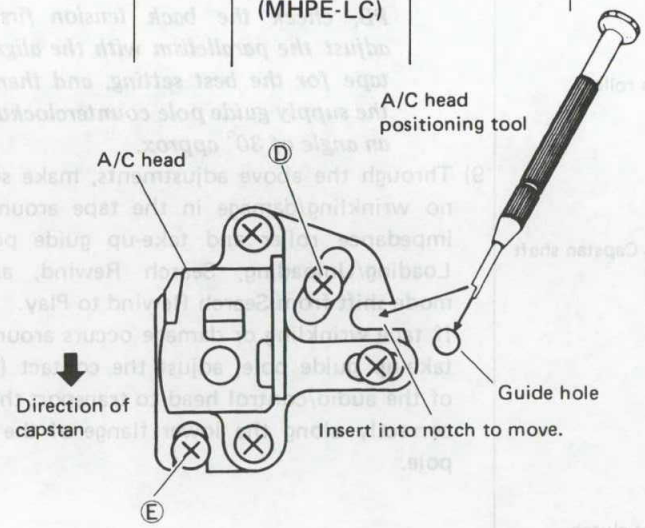


Fig. 2-2-7 Phase of control head

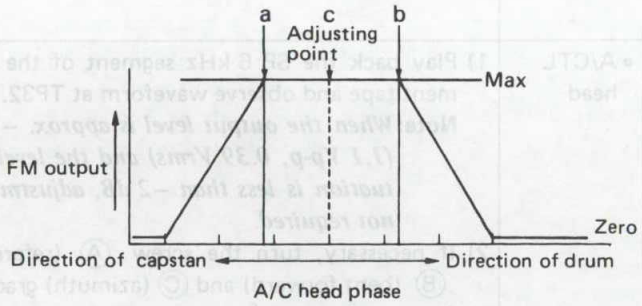


Fig. 2-2-8 Phase adjustment point of control head

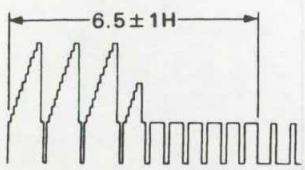


Fig. 2-2-9 PB switching point

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

2.3 PRE AMP CIRCUIT

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure

Note: This adjustment should be performed only when self-recording picture has flicker and B/W reversal after replacing the upper drum or Pre-amp board. It is necessary to correct each head characteristic obtain the optimum picture quality.

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
1	Video Head Resonance /Fo	• PB	• MH-C2 RF sweep	• RD1 (PB FM) [0][3] PRE REC • TP109 (DRUM FF) [0][1] VTR	• Separate chart	1) Play RF sweep portion of MH-C2. 2) Connect the oscilloscope RD1 with external trigger (–) TP109. 3) Vary the tracking CTL to get the maximum FM output at RD1. 4) For more easily obsorving the waveform, adjust VR01 for maximum output in the 4.8 MHz portion. 5) Adjust VC01 to set the resonance point to 4.8 MHz, and make a note of the 4.8 MHz and 2 MHz (Q ratio) as shown in Fig. 2-3-1. 6) Repert step (4) through (6) for CH-2 to CH-4 according to the left side table. 7) At the ratio of step 5) adjust each Q ratio to that of the least effecient channel.

	Adjustment (R)	Adjustment (C)
CH-1	VR01	VC01
CH-2	VR02	VC02
CH-3	VR03	VC03
CH-4	VR04	VC04

Table 2-3-1 Adjust point

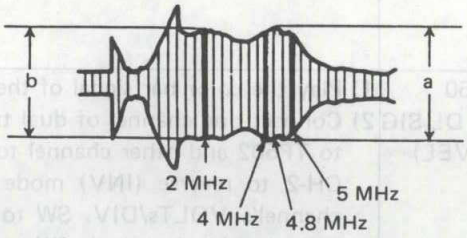


Fig. 2-3-1 PB FM

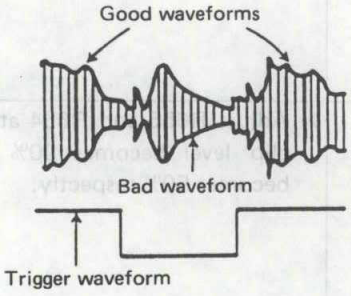


Fig. 2-3-2 PB FM (Trigger waveform)

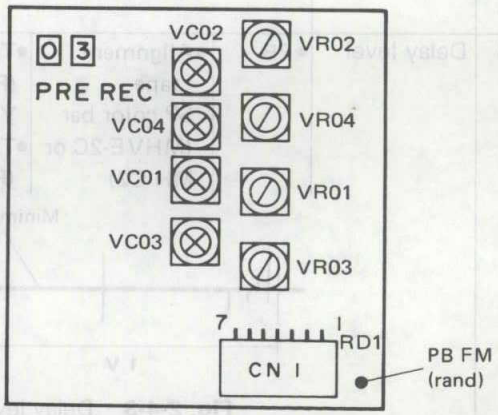


Fig. 2-3-3 PRE REC board VR layout

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

2.4 LUMINANCE (Y) SIGNAL CIRCUIT

Note: • *Before proceeding to do each adjustment, check the adjustment value.*
• *Unless otherwise specified, all adjustment points and adjustment parts are located on [0][1] VTR board.*

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
1	EE Y level	• EE	• Color bar	• TP503 (VIDEO OUT)	• R658 (EE Y LEVEL)	1) Adjust R662 so that Y signal level is 2.0 Vp-p at TP503.
2	PB Y level	• PB	• Alignment tape SP color bar (MHVE-2C or MH-C2)	• TP503 (VIDEO OUT)	• R653 (PB Y LEVEL)	1) Play back the color bar signal of the alignment tape. 2) Adjust R653 so that Y signal level is 2.0 Vp-p at TP503.
3	Delay level	• PB	• Alignment tape SP color bar (MHVE-2C or MH-C2)	• TP502 (PB DEMOD Y) • TP503 (PB 1H DL Y)	• R660 (1H DL SIG LEVEL)	1) Play the color bar signal of the alignment tape. 2) Connect one channel of dual trace oscilloscope to TP502 and other channel to TP503. Change CH-2 to reverse (INV) mode and align both channel's VOLTs/DIV. SW to the same range and select Virtical mode SW to ADD. 3) Adjust R660 for minimum level in order to adjust to the same level.
4	White clip	• EE	• Color bar	• TP504 (EMPHASIS OUT)	• R655 (WHITE CLIP) R654 (DARK CLIP)	1) Adjust R655 and R654 at TP504 so that white clip level becomes 90% and dark clip level becomes 50% respectly.

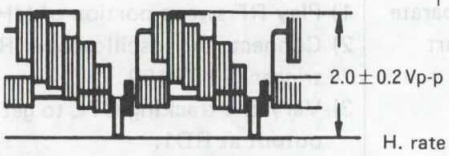


Fig. 2-4-1 EE Y level

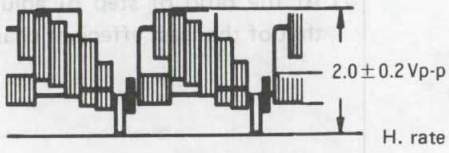


Fig. 2-4-2 PB Y level

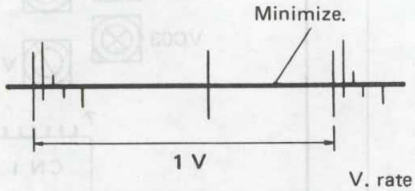


Fig. 2-4-3 Delay level

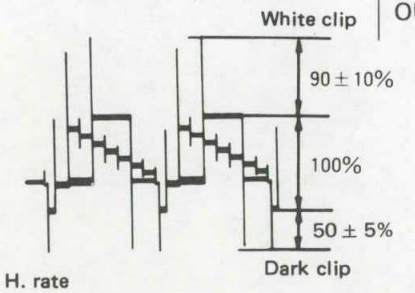
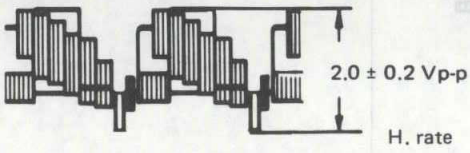
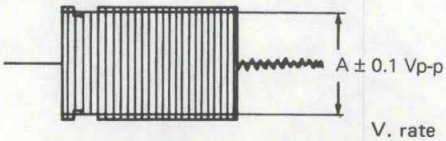
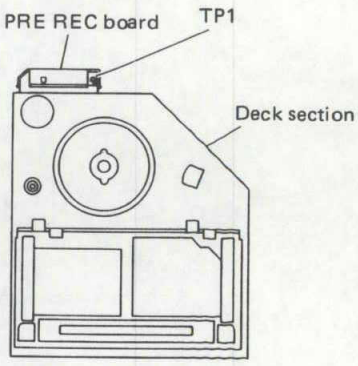


Fig. 2-4-4 White clip

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
5	Carrier & deviation					**Note:** *This item should be adjusted only in the following situations:* *a) EE and PB systems are normal, but sync. is distorted (incorrect carrier setting) in playback of self-recorded signal,* *b) White components are attenuated (wrong deviation),* *c) In spite of recording with input level of 1.0 Vp-p, output level is too small and S/N is very poor.*
		• REC	• No input signal	• TP501 (REC FM OUT)	• R656 (CARRIER)	1) Connect a frequency counter to TP501, and adjust R656 for 4.8 MHz ± 100 kHz without input signal.
		• REC ↓ PB	• Color bar • SP	• TP503 (VIDEO OUT)	• R657 (DEVIATION)	2) Record the color bar signal and then play the same portion. Confirm that TP503 output level is 2.0 Vp-p. 3) If it is out of the above specification, adjust R657 during recording and repeat above step 2).
						 **Fig. 2-4-5**
6	REC FM level	• REC	• Color bar • SP	• TP1 (REC FM OUT) 0 3 PRE REC	• R651 (REC FM LEVEL)	1) Connect the oscilloscope to TP1 of the PRE REC board. 2) Adjust R651 so that FM level of the pedestal portion is A Vp-p. (See Table 2-4-1)
						 **Fig. 2-4-6(A)** REC FM level
						 **Fig. 2-3-6(B)** Test point of PRE REC board

	A
EG	2.6
EK,EA,EG(S)	2.4

Table 2-4-1

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
7	Video EQ	• REC ↓ • PB	• Color sweep • SP	• TP503 (VIDEO OUT)	• R652 (VIDEO EQ)	**Note:** ***This item should be adjusted when playback of self-recorded picture is not sharp (too low 2 MHz component) after replacement of the upper drum or when there is B/W reversal (too high 2 MHz component).*** 1) Record the color sweep signal in SP mode and play it back to observe waveform at TP503. 2) Set the 100 kHz marker of the color sweep signal for 4 scale divisions on the oscilloscope screen, and adjust R652 so that the 2 MHz marker is for 3.0 scale divisions. **Note:** ***After reassembling the deck and camera sections, record a high contrasty object in SP and LP modes and play the recorded pictures respectively to confirm that there is no B/W reversal in the most contrasty part and the picture is clear and sharp on the whole.***

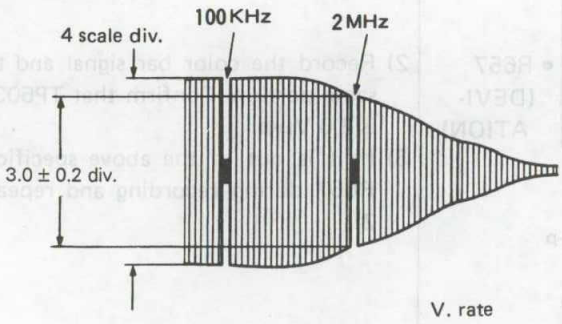


Fig. 2-4-7 Video EQ

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

2.5 COLOR (C) SIGNAL CIRCUIT

Note: • *Before proceeding to do each adjustment, check the adjustment value.*
• *Unless otherwise specified, all adjustment points and adjustment parts are located on [0][1] VTR board.*

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
1	4.43 MHz VXO	• PB	• Alignment tape SP color bar (MHVE-2C or MH-C2)	• TP602 (VXO OUT-1)	• C629 (VXO)	1) Connect a frequency counter to TP602. 2) Adjust C629 so that the frequency becomes 4.433619 MHz ± 60 MHz.
2	320 fH VCO	• EE	• No input signal	• TP604 (SUB BM OUT) • TP1 (GND) • TP603 (VCXO OUT-2) • TP109 (DRUM FF)	• R666 (320 fH VCO)	1) Connect a frequency counter to TP604. 2) Connect a jumping wire between TP1 and TP603. 3) Confirm 0 V (L) at TP109. When it is (H), turn off the power once and turn it on again. Repeat this operation until the potential becomes (L). 4) Adjust R666 so that the frequency becomes 627.0 ± 2 kHz.
3	EE burst level	• EE	• Color bar	• TP503 (VIDEO OUT)	• R659 (EE BURST LEVEL)	1) Adjust R659 so that burst level at TP503 is 0.6 V.
4	PB color level	• PB	• Alignment tape SP color bar (MHVE-2C or MH-C2)	• TP605 (PB COLOR) • TP109 (DRUM FF) (Ext.trigger)	• R665 (PB COLOR LEVEL)	1) Play back the color bar signal of the alignment tape. 2) Observe waveform at TP605 with external trigger from TP109. 3) Adjust R665 to obtain 200 mVp-p as the higher level of channels.

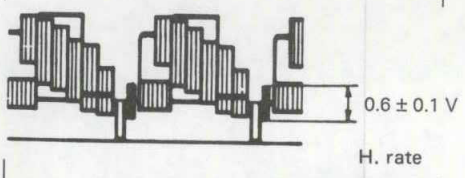


Fig. 2-5-1 EE burst level

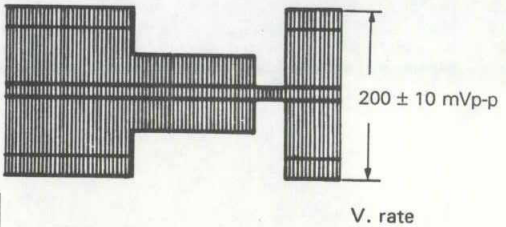


Fig. 2-5-2 PB color level

Free service manuals
Gratis schema's
Digitized by
www.freeservicemanuals.info

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
5	REC color level	• REC ↓ PB	• Color bar • SP	• TP605 (PB COLOR) • TP109 (DRUM FF) for trigger	• R668 (REC COLOR LEVEL)	1) Observe waveform at TP605 with external trigger from TP109. 2) Record color bars in SP mode and play it back. 3) Adjust R668 so that the higher level of channels is A mVp-p.

	A
EG	180 ± 10
EK,EA,EG(S)	170 ± 10

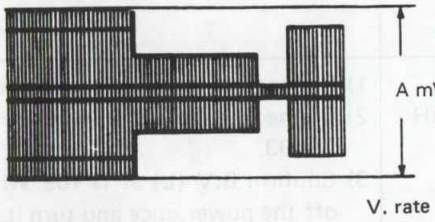


Fig. 2-5-3 REC color level

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
6	PB Burst level	• REC ↓ PB	• Color bar • SP	• TP508 (VIDEO OUT)	• R667 (PB BURST LEVEL)	1) Record the color bar signal and play it to observe waveform at TP508 and adjust R667 so that burst level becomes 0.30 Vp-p.

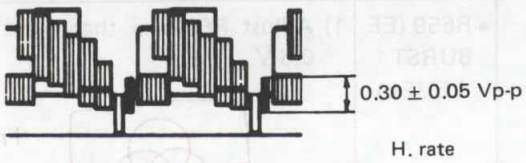


Fig. 2-5-4 PB burst level

Published in Heiloo, Holland.

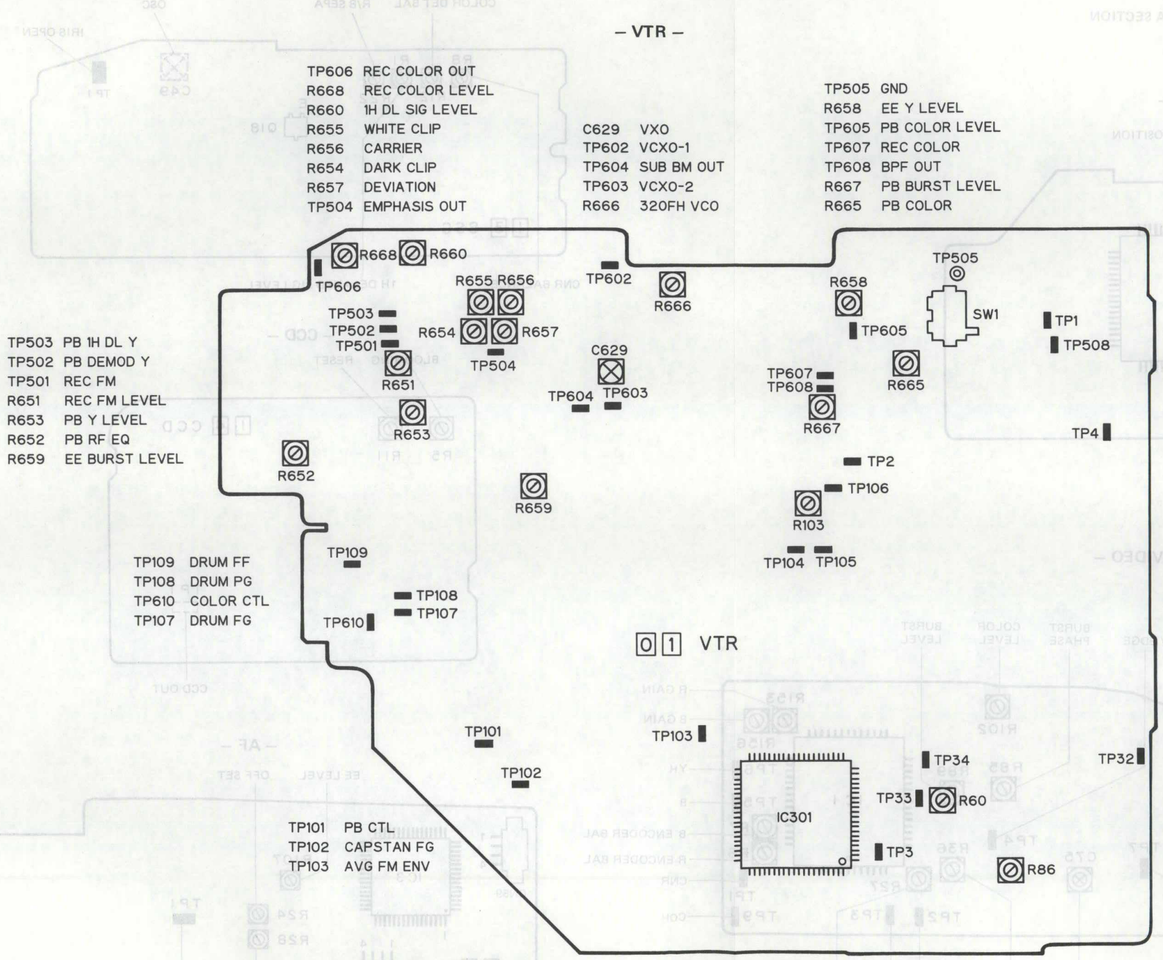
www.freeservicemanuals.info
3/13/16
Digitized by WWW.FREESERVICEMANUALS.INFO

2.6 AUDIO CIRCUIT

Note: *Unless otherwise specified, all adjustment points and adjustment parts are located on [0][1] VTR board.*

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
1	Bias level	• REC	• Non-signal • SP	• TP33 (REC BIAS) • TP34 (REC BIAS GND)	• R86 (BIAS LEVEL)	1) Connect an audio level meter to respective ends of TP33 and TP34. 2) Adjust R86 to obtain –51 dBs (6.5 mVp-p, 2.3 mVrms) in SP REC mode.
2	PB audio level	• EE • REC ↓ PB	• 1 kHz sine wave • SP	• TP32 (AUDIO OUT) • CN2 pin 3 (AUDIO INPUT)	• R60 (AUDIO PB LEVEL)	1) In EE mode, input 1 kHz, –25 dBs (124 mVp-p, 44 mVrms) sine wave to pin 3 of CN2. 2) Fine adjust output of the audio level meter so that signal level at pin 8 of the AV jack of the JACK board is –6 dBs (1.1 Vp-p, 0.39 Vrms). 3) In playback of self-recorded signal, adjust R60 so that signal level at TP32 is –6 dBs (1.1 Vp-p, 0.39 Vrms).

• ADJUSTMENT ELEMENT LOCATION FOR DECK SECTION



Free service manuals
Gratis schema's
Digitized by
www.freeservicemanuals.info

Published in Heiloo, Holland.

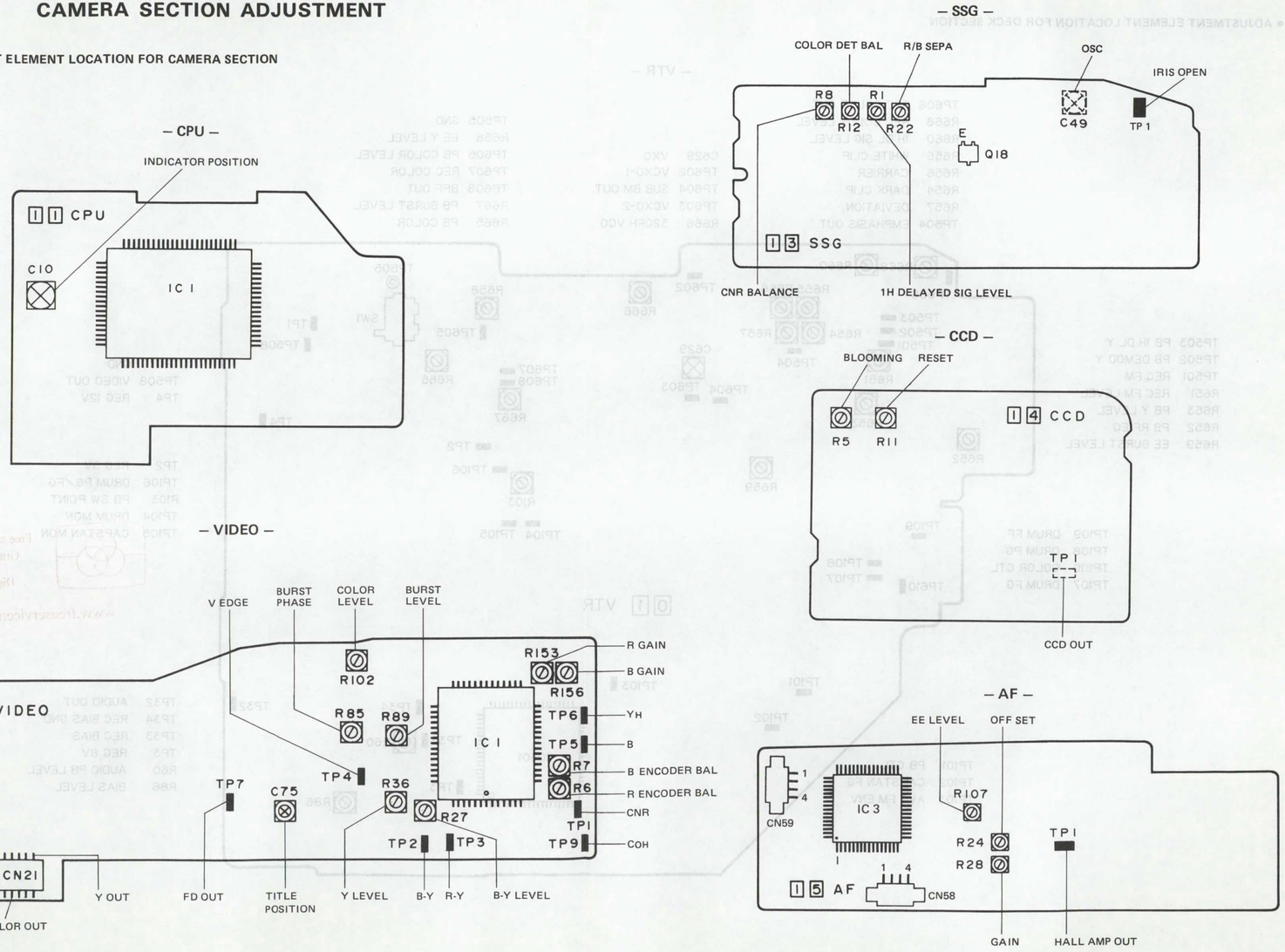
www.freeservicemanuals.info

3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

SECTION 3
CAMERA SECTION ADJUSTMENT

● ADJUSTMENT ELEMENT LOCATION FOR CAMERA SECTION



Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

3.1 PREPARATION

3.1.1 Precaution

1. Use two or more lighting apparatuses (3100 K in color temperature) and light up a test pattern by them at 1200 lux or more brightly.
2. Use a clean test pattern and lens filters.
3. All adjustments must be performed in a room that shuts out other light than the specific illumination.
4. For observing waveform by an oscilloscope at H. rate, connect CH-B of the oscilloscope with TP11 of [1][2] VIDEO board synchronizing with minus trigger, while connect CH-A to a specified test point for measurement. measurement.
5. During adjustments, make sure to shoot a color bar pattern and a gray scale by manual focusing to avoid undesirable zooming to focus on another object by auto focus operation. For, this camera employs the full range auto focus system (1.5 cm to infinite) and zoom operation and focusing are interlocked.
6. For adjustments, set the camera to the following operation mode unless otherwise indicated.
   - Rehearsal mode
   - Standard shutter speed
   - Manual focusing

3.1.2 Connection for adjustment

Referring to Section 1, disassemble the camera section from other units and make connections as follows.

Connector	No. of pins	PART No.	Connection
①	9	PEMCJ0793A-9	[1][8] REAR CN1 ⟷ CPU PWB WIRE
②	9	PEMCJ0793A-9	[1][7] JUNCTION CN3 ⟷ CPU PWB WIRE
③	12	YUJ41361B-12	OPERATION(DECK) CN1 ⟷ [0][1] VTR CN5
④	7	YUJ40095A-7	[1][1] CPU CN15 ⟷ AUTO WHITE SENSOR
⑤	5	YTU94032A-5	[1][7] JUNCTION CN2 ⟺ OPERATION(DECK) CN2

Free service manuals
Gratis schema's
Digitized by
www.freeservicemanuals.info

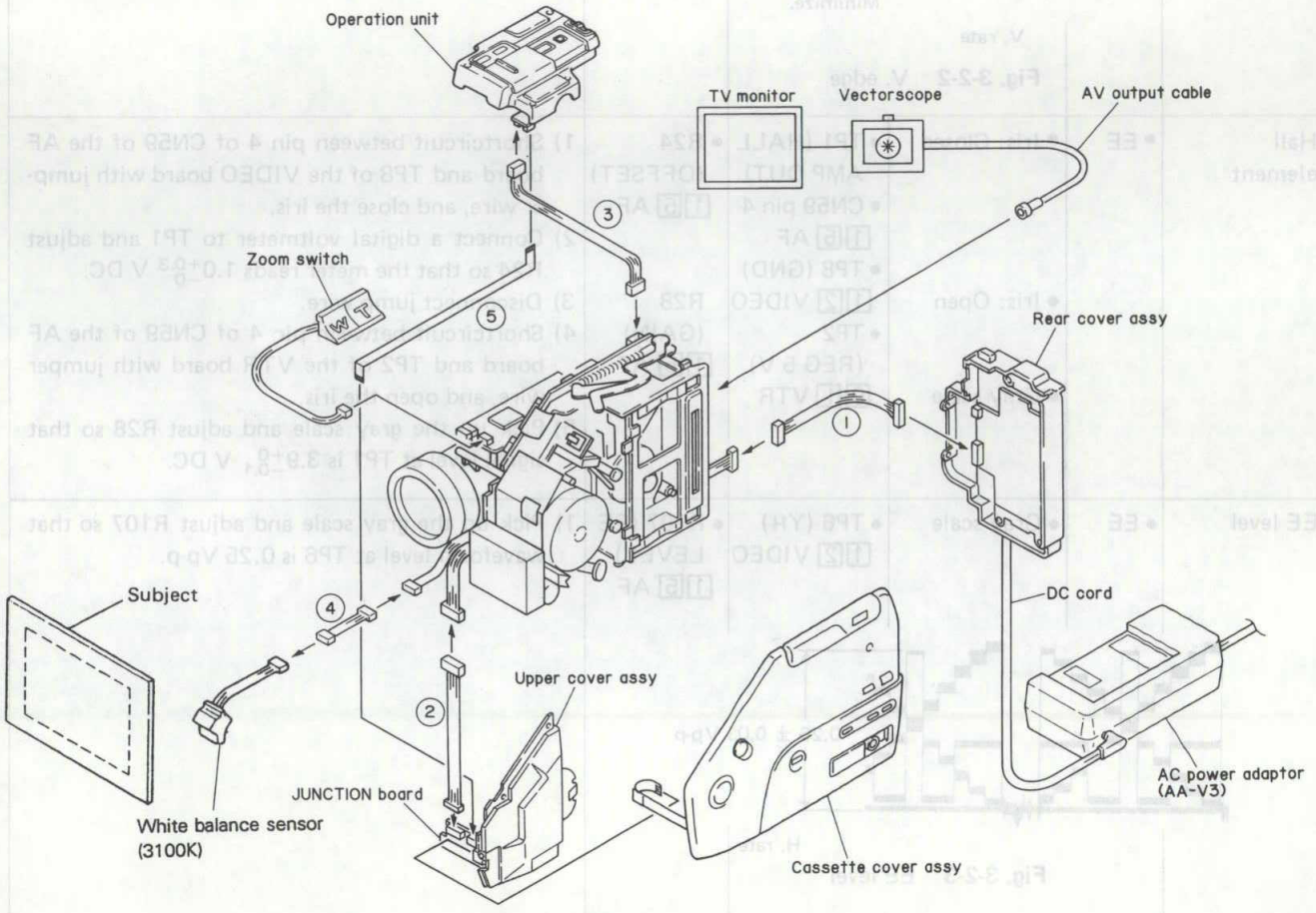


Fig. 3-1-1 Connection for camera adjustment

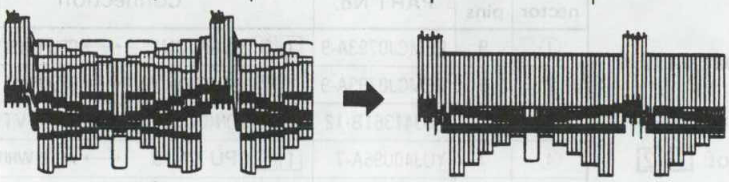
Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

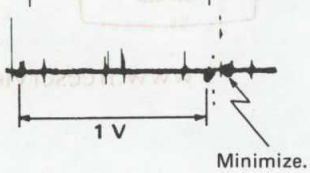
3.2 LUMINANCE (Y) SIGNAL CIRCUIT

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
1	Reset bias	• EE	• Gray scale	• TP1 (CCD OUT) 1 4 CCD	• R11 (RESET) 1 4 CCD	1) Pick up the gray scale and observe waveform at TP1. 2) Adjust R11 to flatten and maximize the waveform.
2	Osc. freq.	• EE		• Q18 emitter 1 3 SSG	• C49 (OSC) 1 3 SSG	1) Connect a frequency counter to the emitter of Q18 of the SSG board and adjust C49 to obtain 9.53496 MHz.
3	Vertical enhancer balance	• EE	• Gray scale	• TP10 (V. EDGE) 1 2 VIDEO	• R1 (1H DELAYED SIGNAL LEVEL) 1 3 SSG	1) Pick up the gray scale and observe waveform at TP10. 2) Adjust R1 to minimize average level of the waveform.
4	Hall element	• EE	• Iris: Closed • Iris: Open • Gray scale	• TP1 (HALL AMP OUT) • CN59 pin 4 1 5 AF • TP8 (GND) 1 2 VIDEO • TP2 (REG 5 V) 0 1 VTR	• R24 (OFFSET) 1 5 AF R28 (GAIN) 1 5 AF	1) Shortcircuit between pin 4 of CN59 of the AF board and TP8 of the VIDEO board with jumper wire, and close the iris. 2) Connect a digital voltmeter to TP1 and adjust R24 so that the meter reads $1.0^{+0.3}_{-0}$ V DC. 3) Disconnect jump wire. 4) Shortcircuit between pin 4 of CN59 of the AF board and TP2 of the VTR board with jumper wire, and open the iris. 5) Pick up the gray scale and adjust R28 so that signal level at TP1 is $3.9^{+0}_{-0.1}$ V DC.
5	EE level	• EE	• Gray scale	• TP6 (YH) 1 2 VIDEO	• R107 (EE LEVEL) 1 5 AF	1) Pick up the gray scale and adjust R107 so that waveform level at TP6 is 0.25 Vp-p.



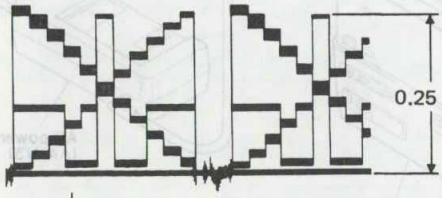
H. rate

Fig. 3-2-1 CCD OUT



V. rate

Fig. 3-2-2 V. edge



H. rate

Fig. 3-2-3 EE level

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
6	Y level	• EE	• Gray scale	• TP503 (VIDEO OUT) [0][1] VTR	• R36 (Y LEVEL) [1][2] VIDEO	1) Pick up the gray scale and observe waveform at TP503. 2) Adjust R36 so that the waveform level becomes 1.4 V.
7	Blooming	• EE		• TV monitor screen	• R5 (BLOOMING) [1][4] CCD	1) Pick up a fluorescent light and adjust R5 to minimize blooling. **Note:** *No matter how further R5 is turned, there will be no change in blooming observed on the monitor. Therefore, set R5 to a position where blooming is minimum and won't change any more.*
8	Indicator position	• EE	• Lens: Closed	• E. VF screen	• C10 (INDICATOR POSITION) [1][1] CPU	1) Close the lens with the cap. 2) Press the Display mode button to display the 'Low Contrast' indication on the E. VF screen. 3) Adjust C10 to position the Low Contrast indication in the center of the screen.
9	Title position	• EE		• TP7 (FD OUT) [1][2] VIDEO	• C75 (TITLE POSITION) [1][2] VIDEO	1) Connect a digital voltmeter to TP7 and adjust C75 to obtain 2.0 ± 0.1 V DC as level at TP7.

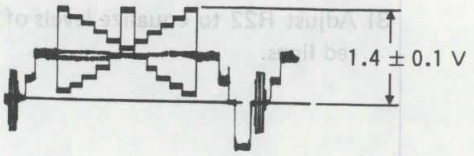


Fig. 3-2-4 Y level

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

3.3 COLOR(C) SIGNAL CIRCUIT

3.3.1 Standard indoor mode

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
1	R/B separation	• EE	• Color bar	• TP5 (B IN) • TP11 (Y OUT) 1 2 VIDEO	• R22 (R/B SEPA.) 1 3 SSG	1) Connect an oscilloscope to TP5. 2) Connect TP11 for external trigger and observe the blue line (see Fig. 3-3-1) with the oscilloscope as it is set to the Hold Off mode. 3) Adjust R22 to equalize levels of the yellow and red lines.
2	Color difference balance	• EE	• Color bar	• Vectorscope	• R12 (COLOR DET BAL) 1 3 SSG	1) Pick up the color bar pattern. 2) Adjust R12 so that dots meet each at the same point on the vectorscope.
3	CNR balance	• EE	• Color bar	• TP1 (CNR) 1 2 VIDEO	• R8 (CNR BAL-ANCE) 1 3 SSG	1) Connect the oscilloscope to TP1. 2) Adjust R8 to flatten the waveform.

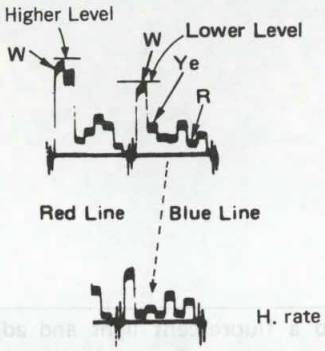


Fig. 3-3-1 R/B balance

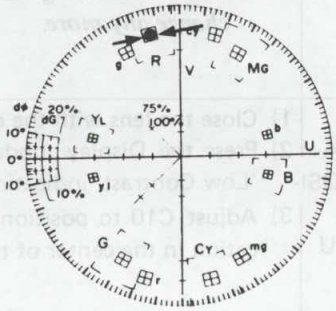
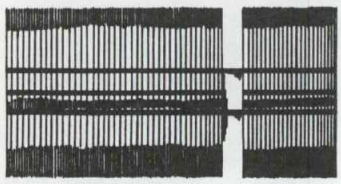
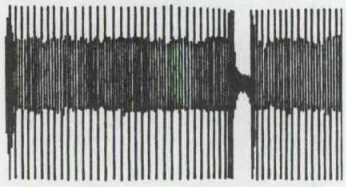


Fig. 3-3-2 Color difference balance



V. rate

Fig. 3-3-3(A) CNR balance (1)



V. rate

Fig. 3-3-3(B) CNR balance (2)

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
4	White balance	• EE	• Gray scale	• TP503 (VIDEO OUT) [0] [1] VTR	• R6 (R ENCODER BAL) • R7 (B ENCODER BAL) • R153 (R GAIN) • R156 (B GAIN) [1] [2] VIDEO	1) Pick up the gray scale and observe waveform at TP503. 2) Alternately adjust R6 and R7 to minimize carrier leakage in the lower 1st and 2nd steps of the waveform. 3) Next, alternately adjust R153 and R156 to minimize carrier leakage in the higher 1st and 2nd steps of the waveform. 4) Repeat the above steps 2) and 3) to minimize carrier leakage in the both.
5	Burst level	• EE	• Lens: Closed	• CN21 pin 7 (COLOR OUT) [1] [2] VIDEO	• R89 (BURST LEVEL) [1] [2] VIDEO	1) Close the lens with the cap. 2) Connect the oscilloscope to pin 7 of CN21. 3) Adjust R89 so that the burst level is 0.3 Vp-p.
6	Burst phase	• EE	• Color bar	• Vectorscope	• R85 (BURST PHASE) [1] [2] VIDEO	1) Pick up the color bar pattern. 2) Adjust R85 so that the burst phase difference becomes 90° on the vectorscope.

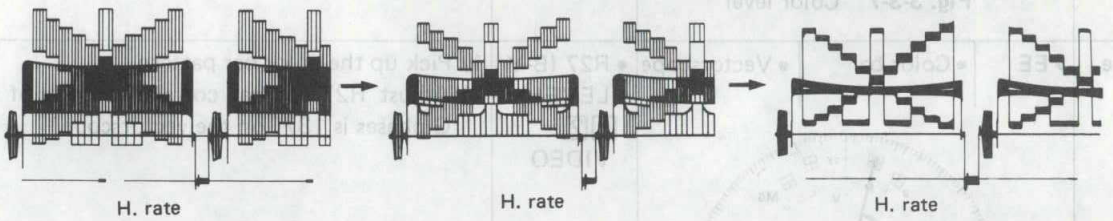


Fig. 3-3-4 White balance

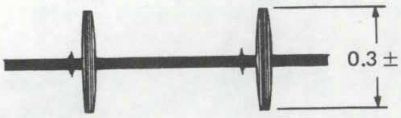


Fig. 3-3-5 Burst level

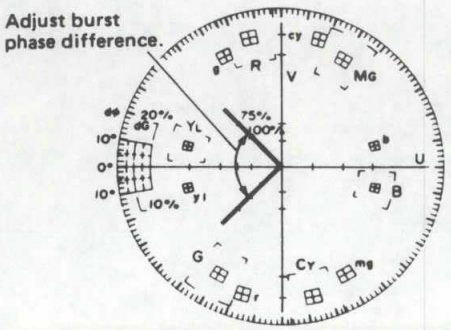


Fig. 3-3-6 Burst phase

Free service manuals
Gratis schema`s
Digitized by
www.freeservicemanuals.info

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
7	Color level	• EE	• Color bar	• Vectorscope	• R102 (COLOR LEVEL) 1 2 VIDEO	1) Pick up the color bar pattern. 2) Adjust R102 so that color level of the red section of the color bars become 1.25 time larger than burst level. 3) Confirm that both adjustment results of the item No. 5 'Burst level' and this item (No. 7 'Color level') are satisfactory. If not, repeat the two adjustments alternately until they meet the specifications respectively.
8	Color phase	• EE	• Color bar	• Vectorscope	• R27 (B-Y LEVEL) 1 2 VIDEO	1) Pick up the color bar pattern. 2) Adjust R27 so that correlative angle of R and G phases is 137° on the vectorscope.

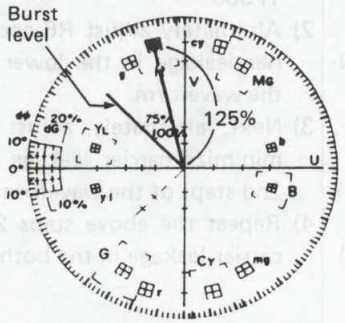


Fig. 3-3-7 Color level

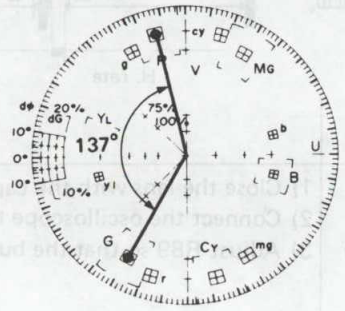


Fig. 3-3-8 Color phase

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

3.4 AUTO FOCUS ADJUSTMENT

3.4.1 Connection for adjustment

Referring to Section 1, disassemble the camera section from the other units and make connections as follows.

Connector	No. of Pins	Parts No.	Connection
①	8	YUJ40095A-8	18 REAR ↔ CPU board WIRE
②	9	PPU58655A-9	17 JUNCTION CN3 ↔ CPU board WIRE
③	12	YUJ41361B-12	01 VTR CN5 ⇔ OPERATION (DECK)
④	10	YUJ41361B-10	12 VIDEO CN21 ⇔ 01 VTR CN15
⑤	16	YUJ41361B-16	11 CPU CN11 ⇔ 01 VTR CN14
⑥	16	YUJ41361B-16	14 CCD CN41 ⇔ 13 SSG CN33
⑦	5	YTU94032A-5	17 JUNCTION CN2 ⇔ OPERATION (DECK) CN2
⑧	6	YUJ41358B-6	DC-DC converter CN61 ⇔ 15 AF CN52
⑨	16	YUJ41358B-16	11 CPU CN14 ⇔ 15 AF CN51

Set the camera (and camera subjects) so that the distance between the lens surface and a subject is more than 2.4 m.
The setscrew of the infinite sensor can be adjusted through the AF adjustment hole provided on the CCD board.

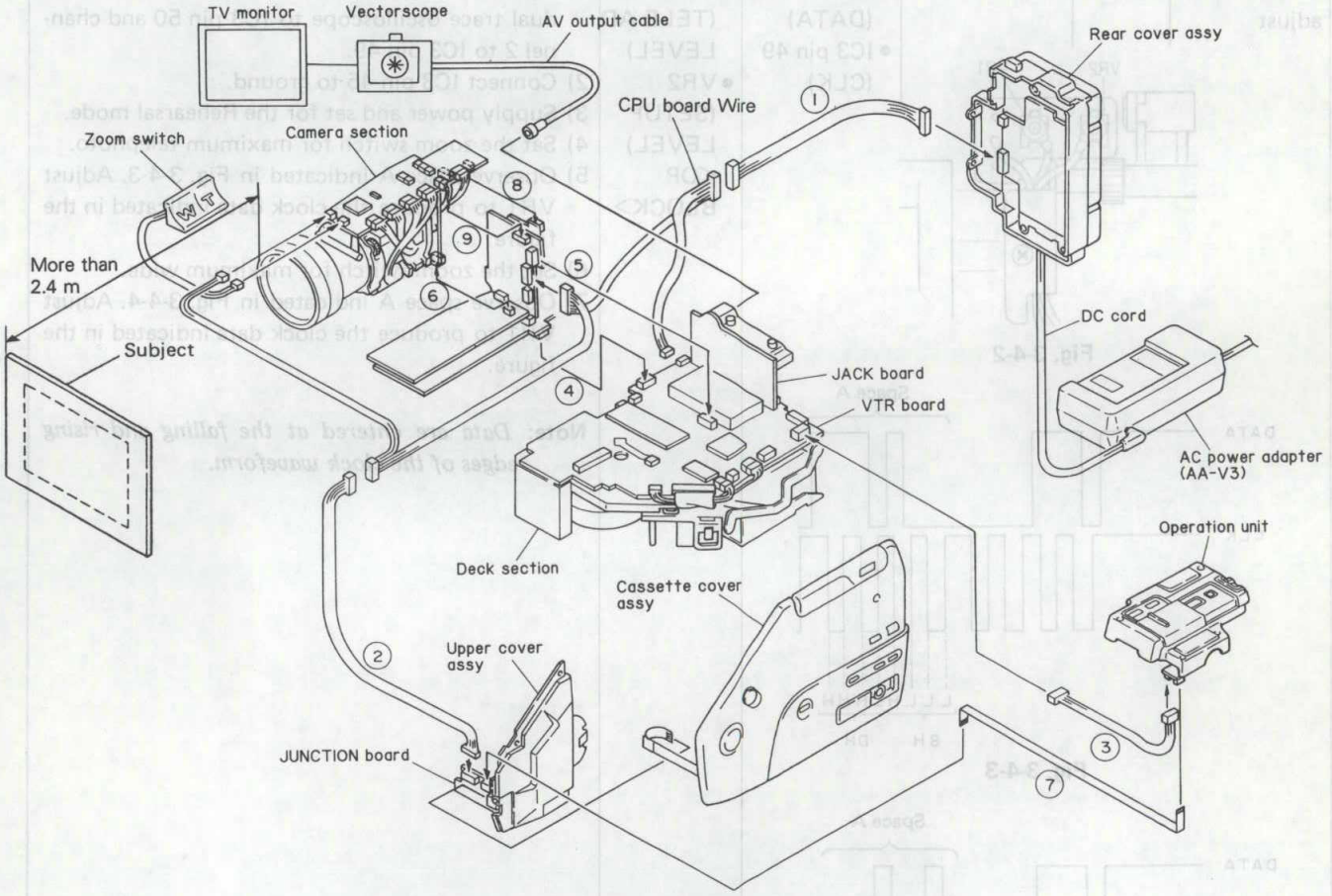


Fig. 3-4-1 Connection for auto focus adjustment

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

3.4.2 Adjustment

Note: • *This adjustment must be performed after replacement of the zoom motor, AF mortor, OP block assy or Focus CTL CPU.*

• *When only the zoom motor is replaced, the adjustment of the Item No. 2 is not required.*

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
1	Confirmation	• EE	• Subject at a distance of more than 2.4 m	• IC3 pin 64 (PHOTO TR IN)		1) Turn off the power and shortcircuit pin 45 of IC3 to GND. 2) Turn on the power and shoot a subject in a distance of more than 2.4 m in the Rehearsal mode. 3) Confirm that voltage at pin 64 of IC3 is 2.22 ± 0.05 V. 4) Shoot a subject in a distance between 2 and 3 m by zooming from the TELE to WIDE positions and vice versa a few times in order to confirm that the picture is nearly in focus in every zooming position.
2	Zoom AD adjust	• EE	–	• IC3 pin 50 (DATA) • IC3 pin 49 (CLK)	• VR1 (TELE AD LEVEL) • VR2 (SETUP LEVEL) <OP BLOCK>	1) With power supply off, connect channel 1 of a dual trace oscilloscope to IC3 pin 50 and channel 2 to IC3 pin 49. 2) Connect IC3 pin 45 to ground. 3) Supply power and set for the Rehearsal mode. 4) Set the zoom switch for maximum telephoto. 5) Observe space A indicated in Fig. 3-4-3. Adjust VR1 to produce the clock data indicated in the figure. 6) Set the zoom switch for maximum wide. 7) Observe space A indicated in Fig. 3-4-4. Adjust VR1 to produce the clock data indicated in the figure. **Note:** *Data are entered at the falling and rising edges of the clock waveform.*

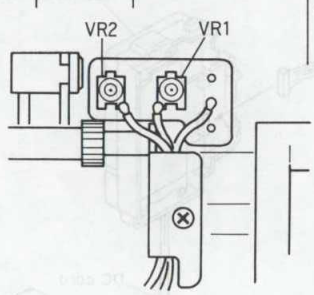


Fig. 3-4-2

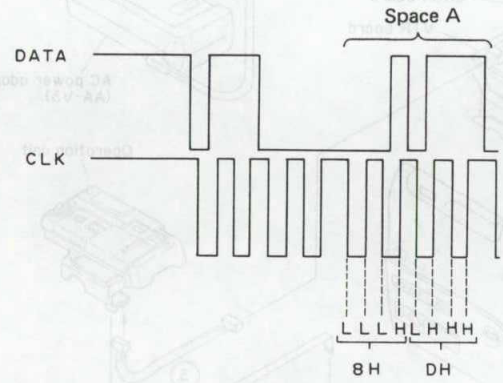


Fig. 3-4-3

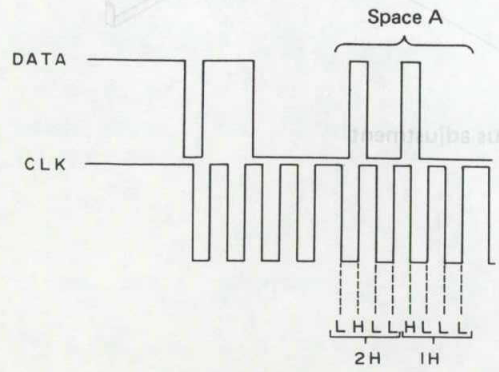


Fig. 3-4-4

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

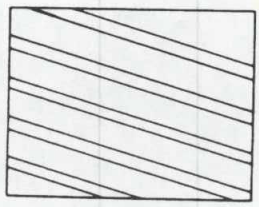
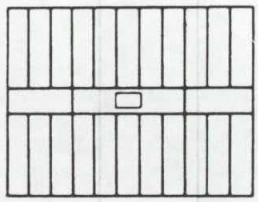
No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
3	Auto focus	• EE	• Subject at a distance of more than 2.4 m	• IC3 pin 64 (PHOTO TR IN)	• Infinite sensor	1) Shoot a subjcet in a distance of more than 2.4 m in the Rehearsal mode. 2) Attach ND filters to the lens to open the iris fully. 3) Set the FOCUS button to MANUAL. 4) Set the ZOOM switch to the TELE end. 5) By opetating the manual focus buttons (+ and –) to bring the subjcet into focus on the TV monitor. 6) Adjust the setscrew of the infinity sensor so that voltage at pin 64 of IC3 is 2.22 ± 0.05 V.

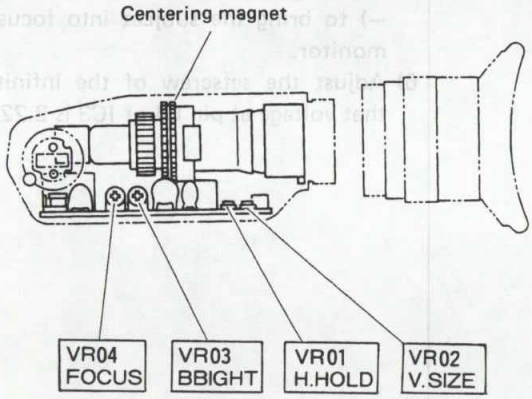
Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

3.5 ELECTRONIC VIEWFINDER (E. VF) ADJUSTMENT

No.	Item	Mode	Signal & Setting	Measurement Point	Adjustment Parts	Adjustment Procedure
1	Horizontal sync.	• EE	• Gray scale	• E. VF	• VR01 (H. HOLD) 5 0 E.VF	1) Observing the viewfinder screen, turn VR01 fully clockwise to make the picture unstable. 2) Slowly return VR01 counterclockwise to find a point where the picture becomes stable, and mark this position. 3) Turn VR01 fully counterclockwise to make the picture unstable in the same manner as 1) above. 4) Slowly return VR01 clockwise until the picture becomes stable, and mark this position of VR01. 5) Finally set VR01 to the midpoint between the two markings of 2) and 4).  (a)  (b)
2	Vertical scanning		• Gray scale	• E. VF	• VR02 (V. SIZE) 5 0 E.VF	1) Observing the viewfinder screen, adjust VR02 for normal picture amplitude.
3	Centering		• Gray scale	• E. VF	• Centering magnet	1) Shoot the gray scale to position it in the center of the TV monitor screen, and adjust the centering magnet to locate the gray scale in the center of the viewfinder screen.
4	Focus		• Gray scale	• E. VF	• VR04 (FOCUS) 5 0 E.VF	1) Observing the viewfinder screen, adjust VR04 so that the center image of the gray scale becomes sharp and clear.
5	Brightness		• Lens: Closed with lens cap	• E. VF	• VR03 (BRIGHT) 5 0 E.VF	1) Close the lens with the lens cap and adjust VR03 so that the raster of the CRT is just visible in the viewfinder.



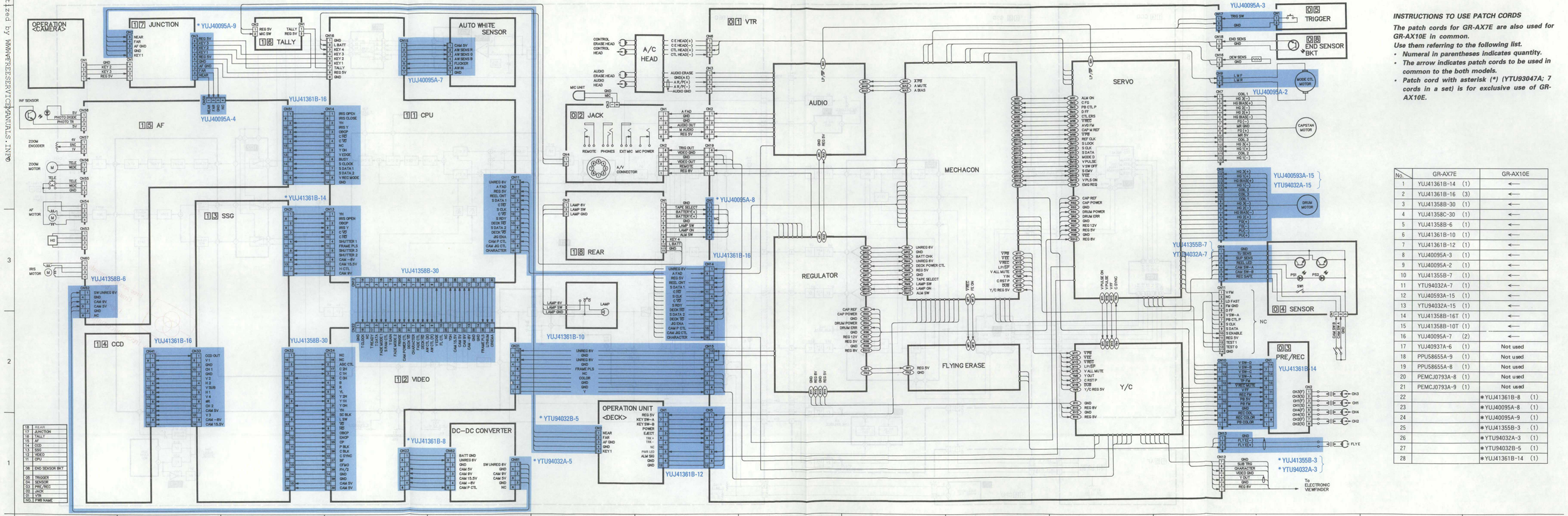
Published in Heiloo, Holland.

www.freeservicemanuals.info

EDITED BY WWW.FREESERVICEMANUALS.INFO

SECTION 4
OVERALL WIRING AND BLOCK DIAGRAMS

4.1 OVERALL WIRING



No.	PWB NAME
18	REAR
17	JUNCTION
16	TALLY
15	AF
14	CCD
13	SSG
12	VIDEO
11	CPU
08	END SENSOR BKT
05	TRIGGER
04	SENSOR
03	PRE/REC
02	JACK
01	VTR

INSTRUCTIONS TO USE PATCH CORDS

The patch cords for GR-AX7E are also used for GR-AX10E in common.

Use them referring to the following list.

- *Numeral in parentheses indicates quantity.*
- *The arrow indicates patch cords to be used in common to the both models.*
- *Patch cord with asterisk (*) (YTU93047A; 7 cords in a set) is for exclusive use of GR-AX10E.*

No.	GR-AX7E	GR-AX10E
1	YUJ41361B-14 (1)	⟵
2	YUJ41361B-16 (3)	⟵
3	YUJ41358B-30 (1)	⟵
4	YUJ41358C-30 (1)	⟵
5	YUJ41358B-6 (1)	⟵
6	YUJ41361B-10 (1)	⟵
7	YUJ41361B-12 (1)	⟵
8	YUJ40095A-3 (1)	⟵
9	YUJ40095A-2 (1)	⟵
10	YUJ41355B-7 (1)	⟵
11	YTU94032A-7 (1)	⟵
12	YUJ400593A-15 (1)	⟵
13	YTU94032A-15 (1)	⟵
14	YUJ41358B-16T (1)	⟵
15	YUJ41358B-10T (1)	⟵
16	YUJ40095A-7 (2)	⟵
17	YUJ40937A-6 (1)	Not used
18	PPU58655A-9 (1)	Not used
19	PPU58655A-8 (1)	Not used
20	PEMCJ0793A-8 (1)	Not used
21	PEMCJ0793A-9 (1)	Not used
22		* YUJ41361B-8 (1)
23		* YUJ40095A-8 (1)
24		* YUJ40095A-9 (1)
25		* YUJ41355B-3 (1)
26		* YTU94032A-3 (1)
27		* YTU94032B-5 (1)
28		* YUJ41361B-14 (1)

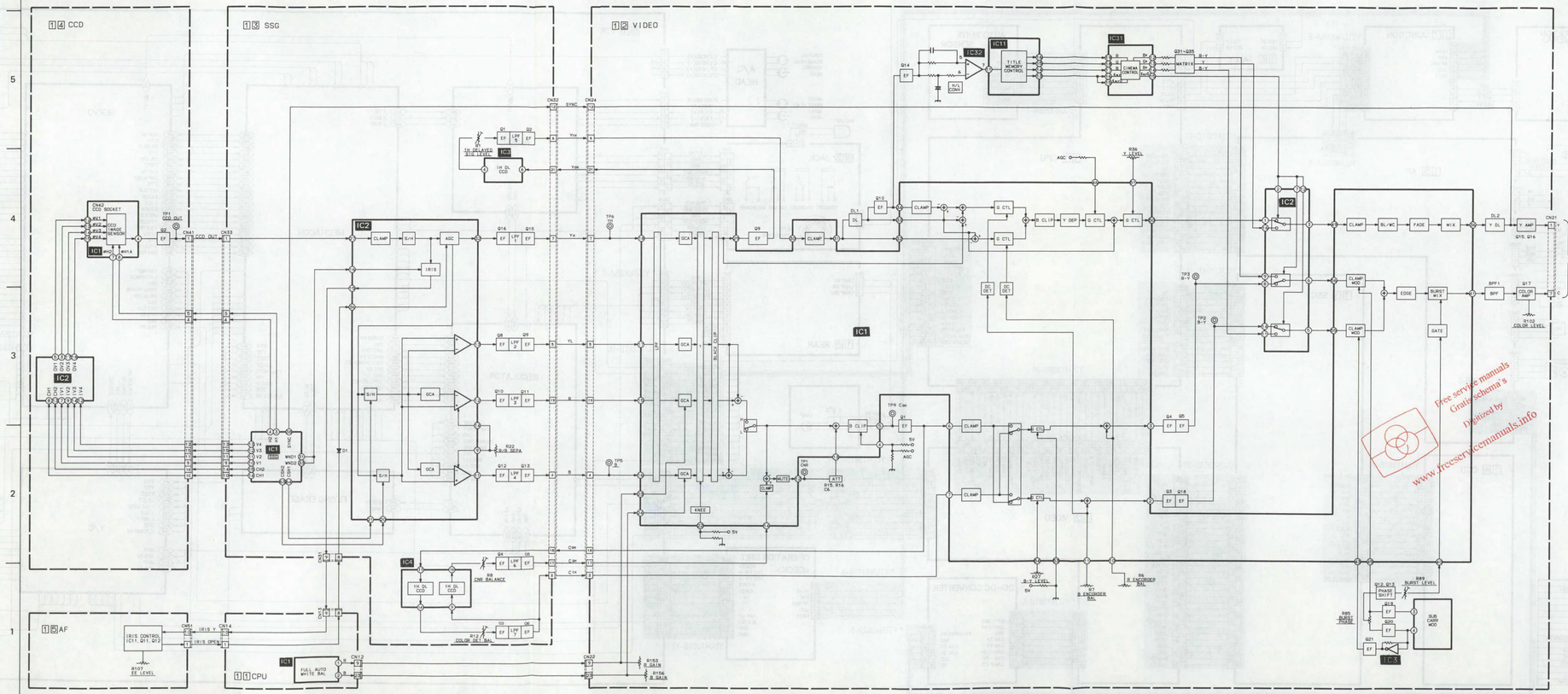
Published in Heiloo, Holland.

www.freeservicemanuals.info

3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

4.2 CAMERA BLOCK DIAGRAM

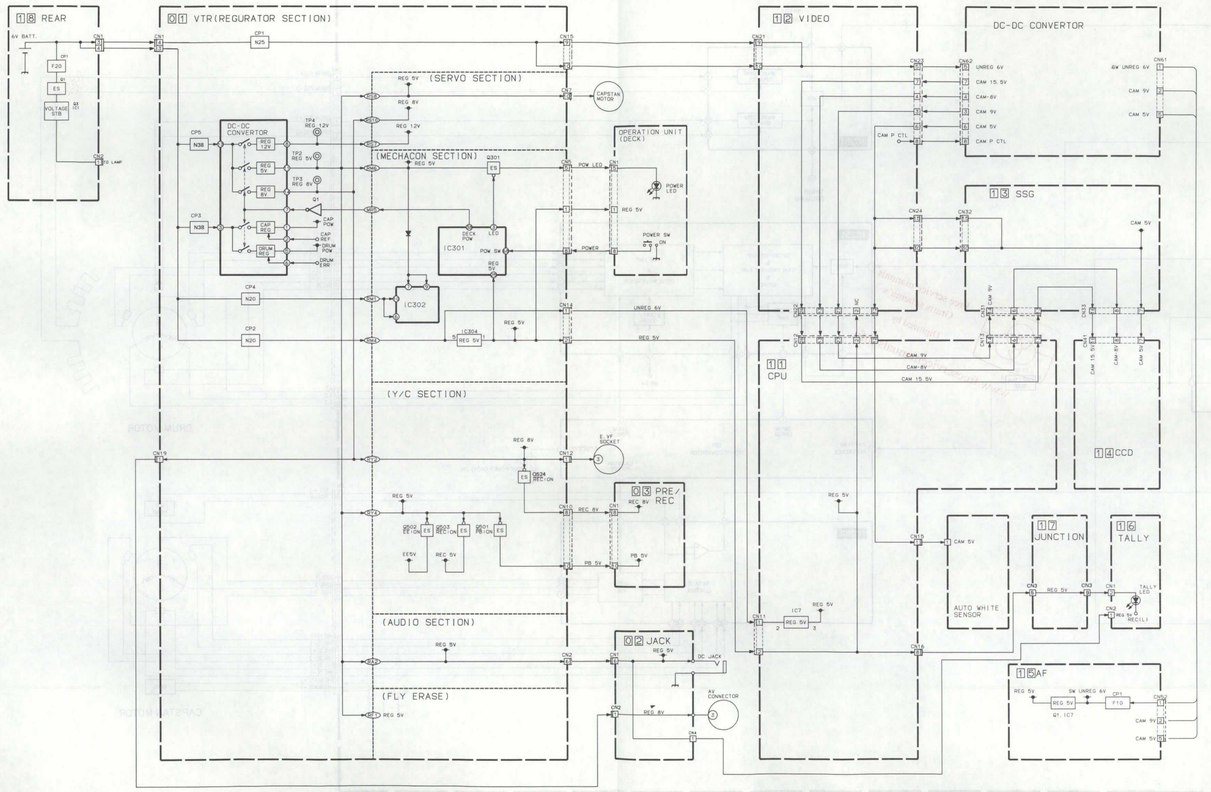


Free service manuals
Gratis schema's
Digitized by
www.freeservicemanuals.info

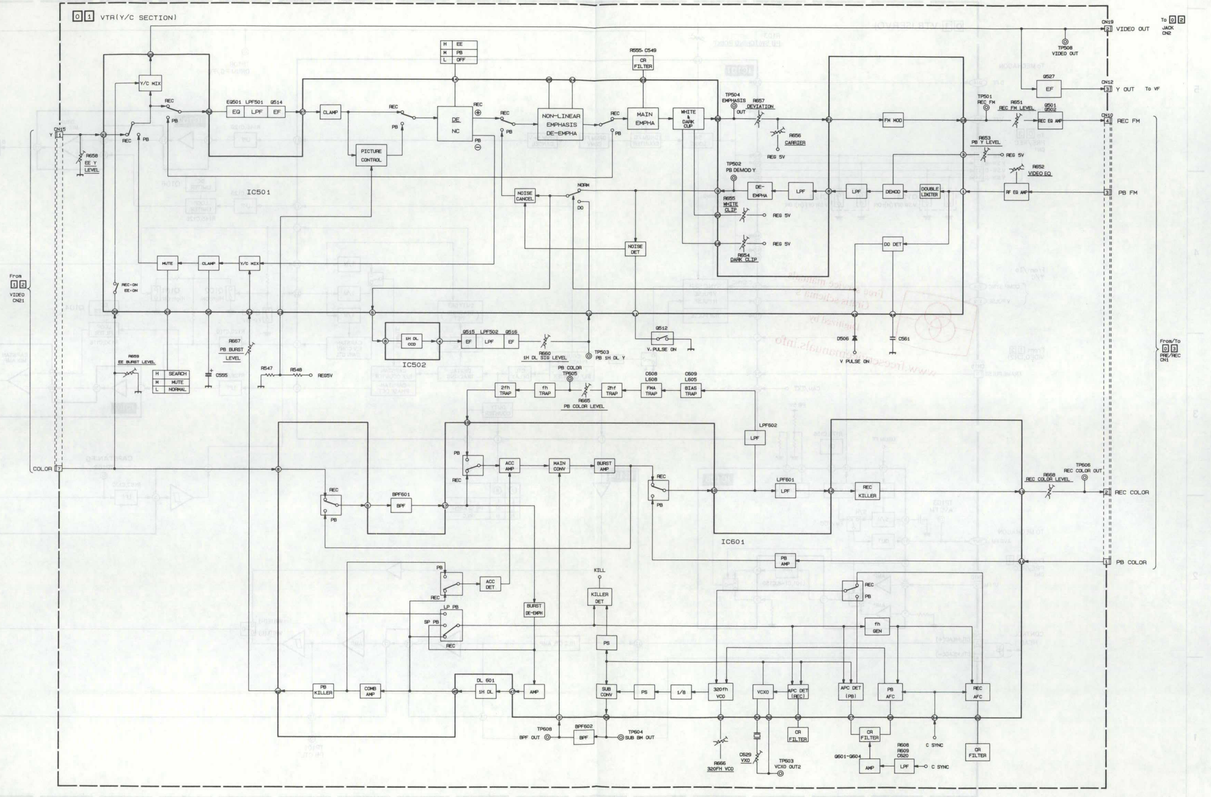
Published in Heiloo, Holland.

www.freeservicemanuals.info

4.3 POWER SYSTEM BLOCK DIAGRAM



4.4 Y/C BLOCK DIAGRAM

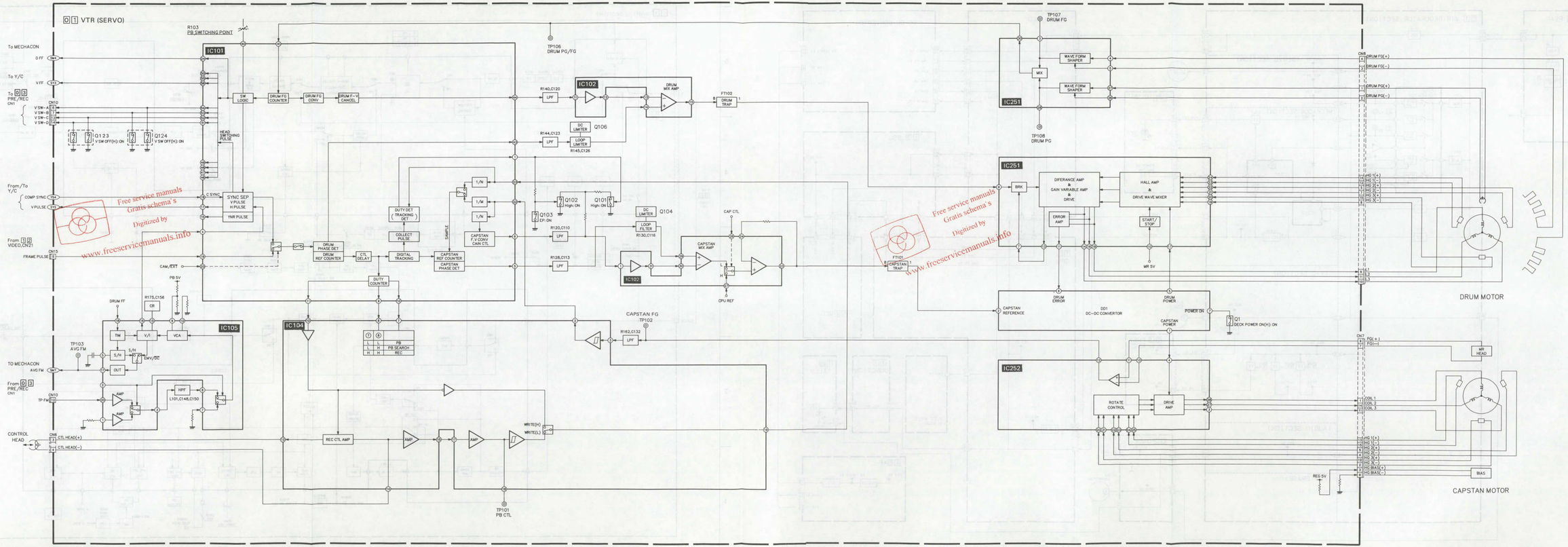


Digitized by www.FREESERVICEMANUALS.INFO

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

4.5 SERVO BLOCK DIAGRAM



Digitized by www.FREESERVICEMANUALS.INFO

Published in Heiloo, Holland.

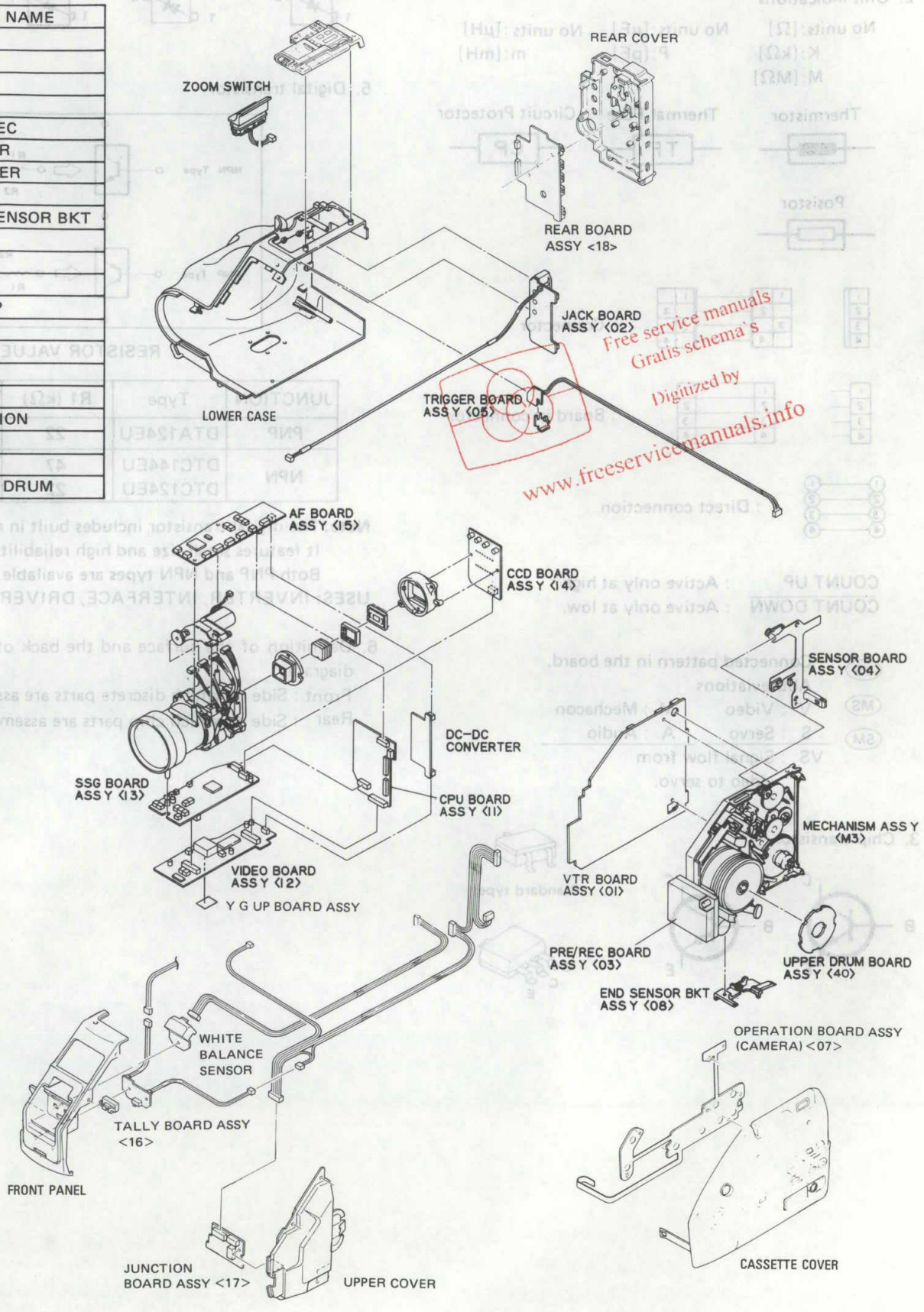
www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

SECTION 5
DIAGRAMS AND CIRCUIT BOARDS

5.1 CIRCUIT BOARD LOCATIONS

No.	PWB NAME
01	VTR
02	JACK
03	PRE/REC
04	SENSOR
05	TRIGGER
08	END SENSOR BKT
11	CPU
12	VIDEO
	Y G UP
13	SSG
14	CCD
15	AF
16	TALLY
17	JUNCTION
18	REAR
40	UPPER DRUM



Free service manuals
Gratis schema`s
Digitized by
www.freeservicemanuals.info

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

5.2 SCHEMATIC DIAGRAM NOTES

1. [ ] parts are safety related parts. When replacing them, be sure to use the specified parts.

2. Unit indications

No units: [Ω] K: [kΩ] M: [MΩ]
No units: [μF] P: [pF]
No units: [μH] m: [mH]

Thermistor
Thermal Fuse — TF
Circuit Protector — CP

Posistor

: Connector

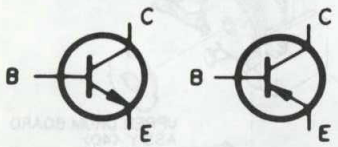
: Board in connector

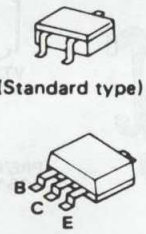
: Direct connection

COUNT UP : Active only at high.
COUNT DOWN : Active only at low.

(VS) : Connected pattern in the board.
Abbreviations
(MS) V : Video M : Mechacon
(SM) S : Servo A : Audio
VS : Signal flow from video to servo.

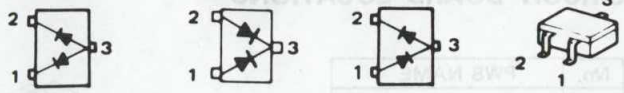
3. Chip transistor



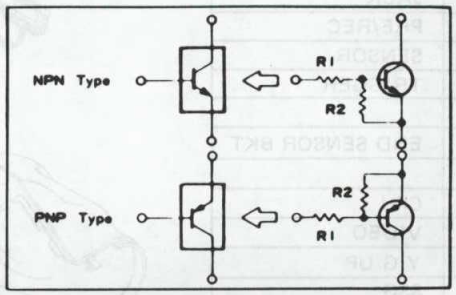


4. Chip diode

DAP202U MA141WA
DAN202U MA141WK
MA143 DA204U



5. Digital transistor



RESISTOR VALUES

JUNCTION	Type	R1 (kΩ)	R2 (kΩ)
PNP	DTA124EU	22	22
NPN	DTC144EU	47	47
	DTC124EU	22	22

Note: The digital transistor includes built in resistors.
It features small size and high reliability.
Both PNP and NPN types are available.
USES: INVERTER, INTERFACE, DRIVER CIRCUITS.

6. Definition of the surface and the back of circuit board diagrams
Front : Side on which discrete parts are assembled
Rear : Side on which chip parts are assembled

Published in Heiloo, Holland.

www.freeservicemanuals.info

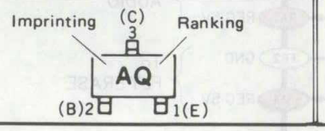
Digitized by WWW.FREESERVICEMANUALS.INFO

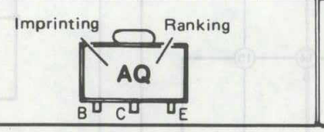
5.3 REPLACING SUBMINIATURE "CHIP" PARTS

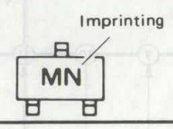
1. Some resistors, shorting jumpers (0 Ω resistance), ceramic capacitors, transistors, and diodes are chip parts. These chip parts cannot be reused after they are once removed.
2. Additional compactness is achieved by using subminiature chip parts for certain circuit elements. When replacing these parts, note the cautions outlined below.
3. Chip transistors and diodes used in this model are outlined below.
4. Refer to parts list for correct part numbers.

● **Chip transistor and chip diode imprinting**

Transistors				Diodes	
Type	Imprinting	Type	Imprinting	Type	Imprinting
DTA124EU	15	2SB798	DM, DL, DK	DAN202U	N
DTA144EU	16	2SC2412K(S)	BS	DAP202K	P
DTC124EU	25	2SC3931	UB~UD	DAP202U	P
DTC124XU	45	2SC3936(BC)	KB, KC	DA204U	K
DTC144EU	26	2SC4081	BQ~BS	FMN1	N1
FMC2	C2	2SC4097(QR)	CQ, CR	IMN10	N10
FMG1	G1	2SC4098(PQ)	AP, AQ	MA141WA	MN
FMG2	G2	2SC4099(NP)	JN, JP	MA141WK	MT
FMQ1	Q1	2SC4176	B33, B34, B35	MA143	MC
FMS2	S2	2SC4177(56)	L5, L6	MA3075H	7.5H
FMU1	U1	2SC4178(34)	F13, F14	MA704	MIK
FMW1	W1	2SC4181	L17, L18	MA714	MIP
FMW3	W3	2SD1819	YR~YS	MA716	M1U
FMY1	Y1	2SJ146	4D	RB451F	3C
2SA1036K(QR)	HQ ~ HR	2SK198P,Q	10P, 10Q	RD7.5M-T1B2	752
2SA1532(BC)	EB, EC	2SK620	3N	RD7.5M-T2B2	752
2SA1576	FQ ~ FS	2SK665	30	RLZ5.6B	753
2SA1577	HQ ~ HS	3SK179	V03	RLZ8.2B	822
2SA1610	Y33, Y34			RD7.5MB3	125
2SA1611(56)	M5, M6			RD8.2MB2	165
2SB1218(RS)	AR, AS				
2SB624	BV4				







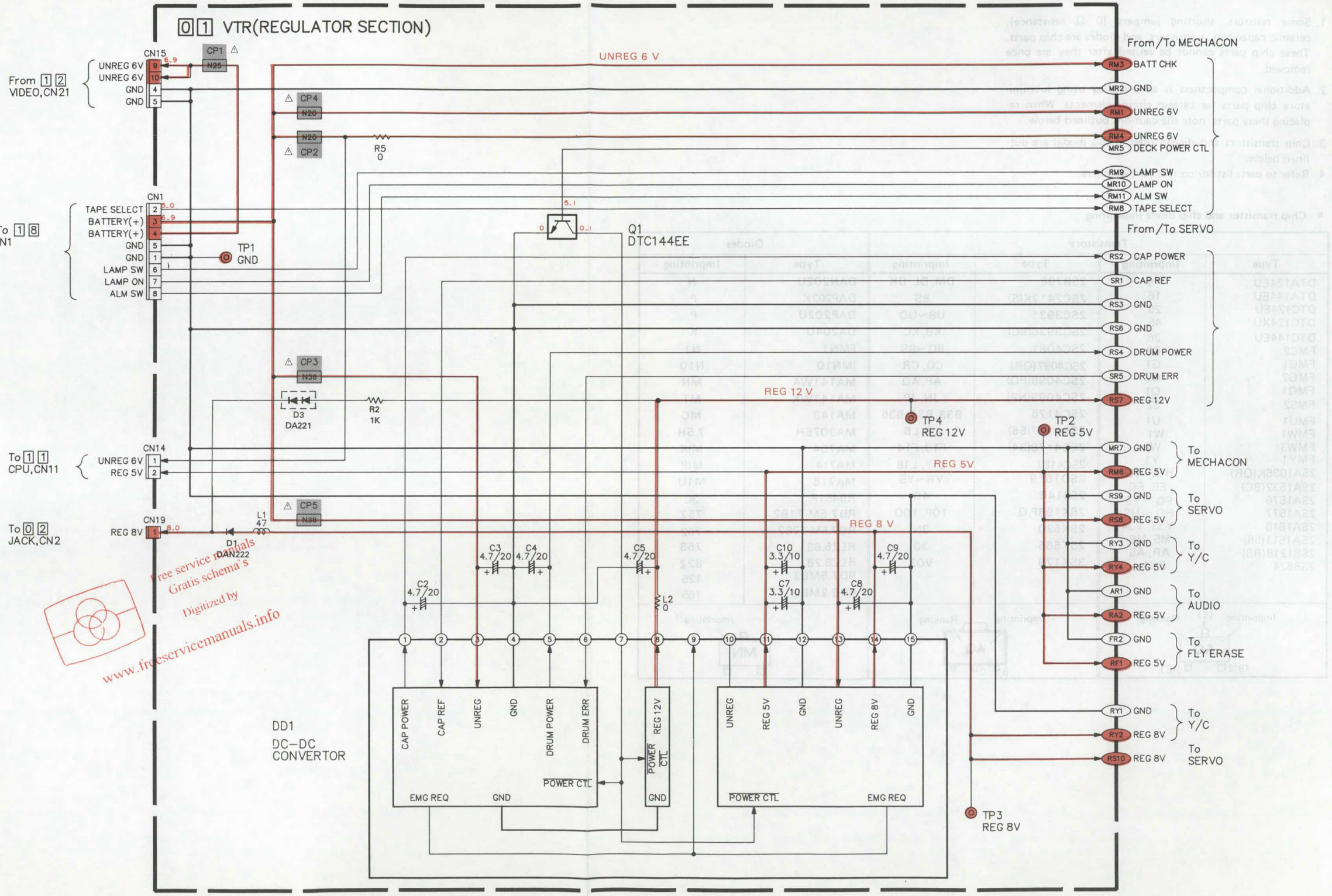
Published in Heiloo, Holland.

www.freeservicemanuals.info

5.4 REGULATOR SCHEMATIC DIAGRAM

● Voltage
REC : Y/C separator input, color bar SP mode, VHS mode.
PB : Alignment tape, color bar SP mode, VHS mode.
*Where voltage differ between recording and palyback, the voltage during playback is shown in parenthesis.

● Shaded (▒) parts are critical for safety.
Replace only with specified part numbers.



Free service manuals
Gratis schema`s
Digitized by
www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

www.freeservicemanuals.info

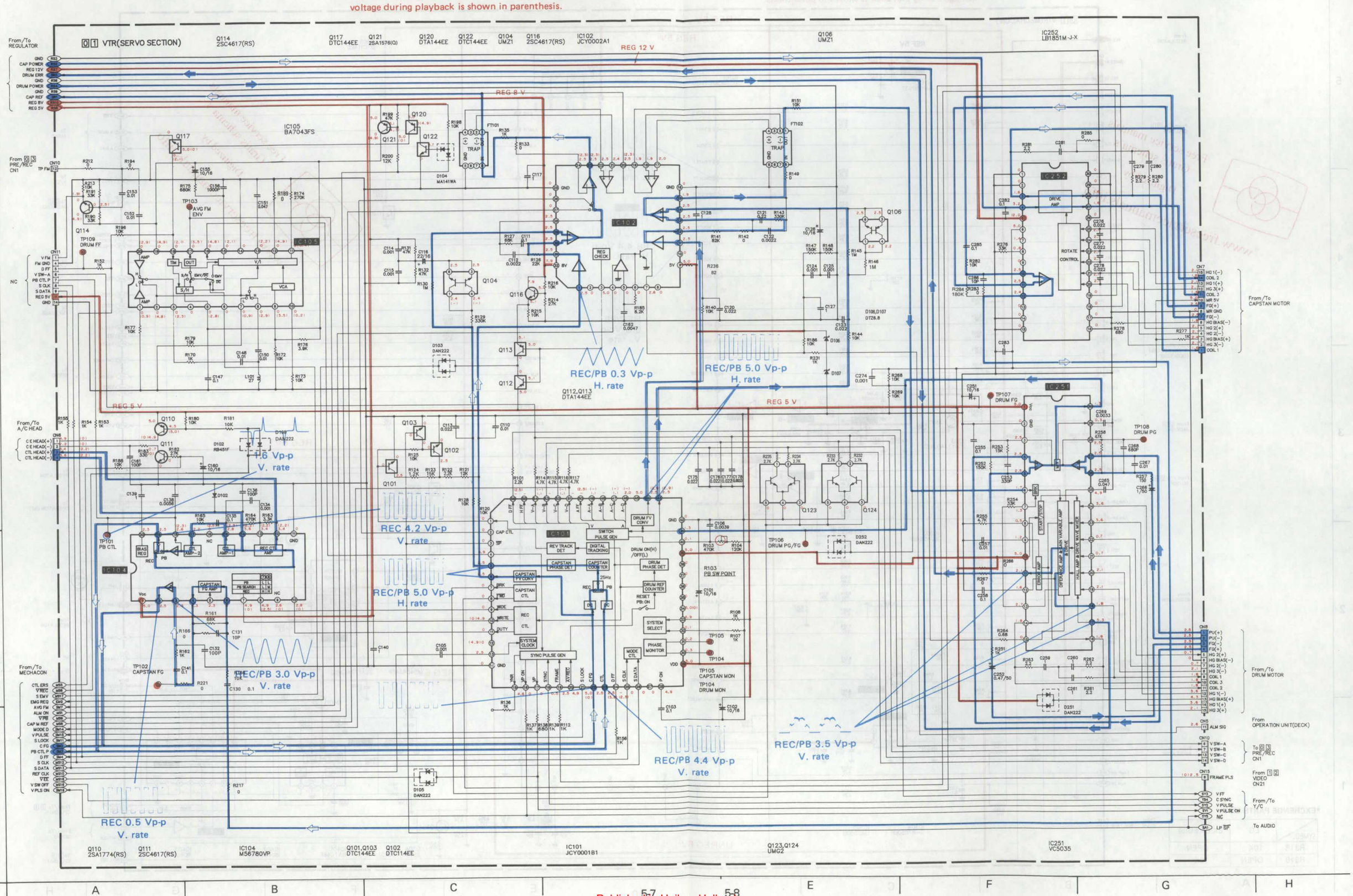
Digitized by WWW.FREESERVICEMANUALS.INFO

5.5 SERVO SCHEMATIC DIAGRAM

● Voltage
REC : Y/C separator input, color bar SP mode, VHS mode.
PB : Alignment tape, color bar SP mode, VHS mode.
*Where voltage differ between recording and palyback, the voltage during playback is shown in parenthesis.

● Waveform
REC : Y/C separator input, color bar SP mode, VHS mode.
PB : Alignment tape, color bar SP mode, VHS mode.

● SIGNAL PATH
⬅ DRUM SERVO
⇦ CAPSTAN SERVO



Published in Heiloo, Holland.

www.freeservicemanuals.info

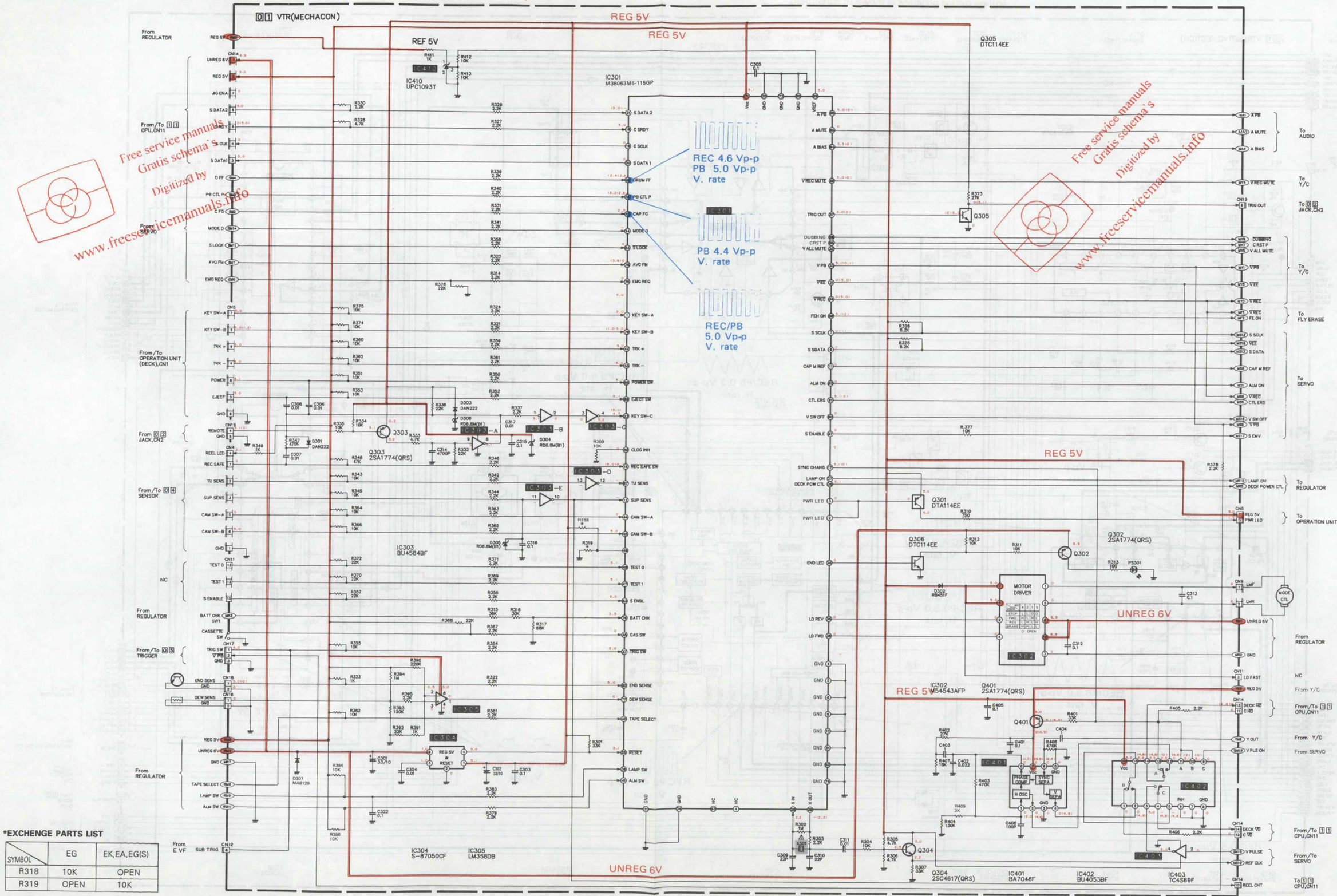
Digitized by WWW.FREESERVICEMANUALS.INFO

5.6 MECHACON SCHEMATIC DIAGRAM

● Voltage
REC : Y/C separator input, color bar SP mode, VHS mode.
PB : Alignment tape, color bar SP mode, VHS mode.
*Where voltage differ between recording and palyback, the voltage during playback is shown in parenthesis.

● Shaded ( ) parts are critical for safety.
Replace only with specified part numbers.

● Waveform
REC : Y/C separator input, color bar SP mode, VHS mode.
PB : Alignment tape, color bar SP mode, VHS mode.



***EXCHENGE PARTS LIST**

SYMBOL	EG	EK,EA,EG(S)
R318	10K	OPEN
R319	OPEN	10K

Published in Heiloo, Holland.

www.freeservicemanuals.info

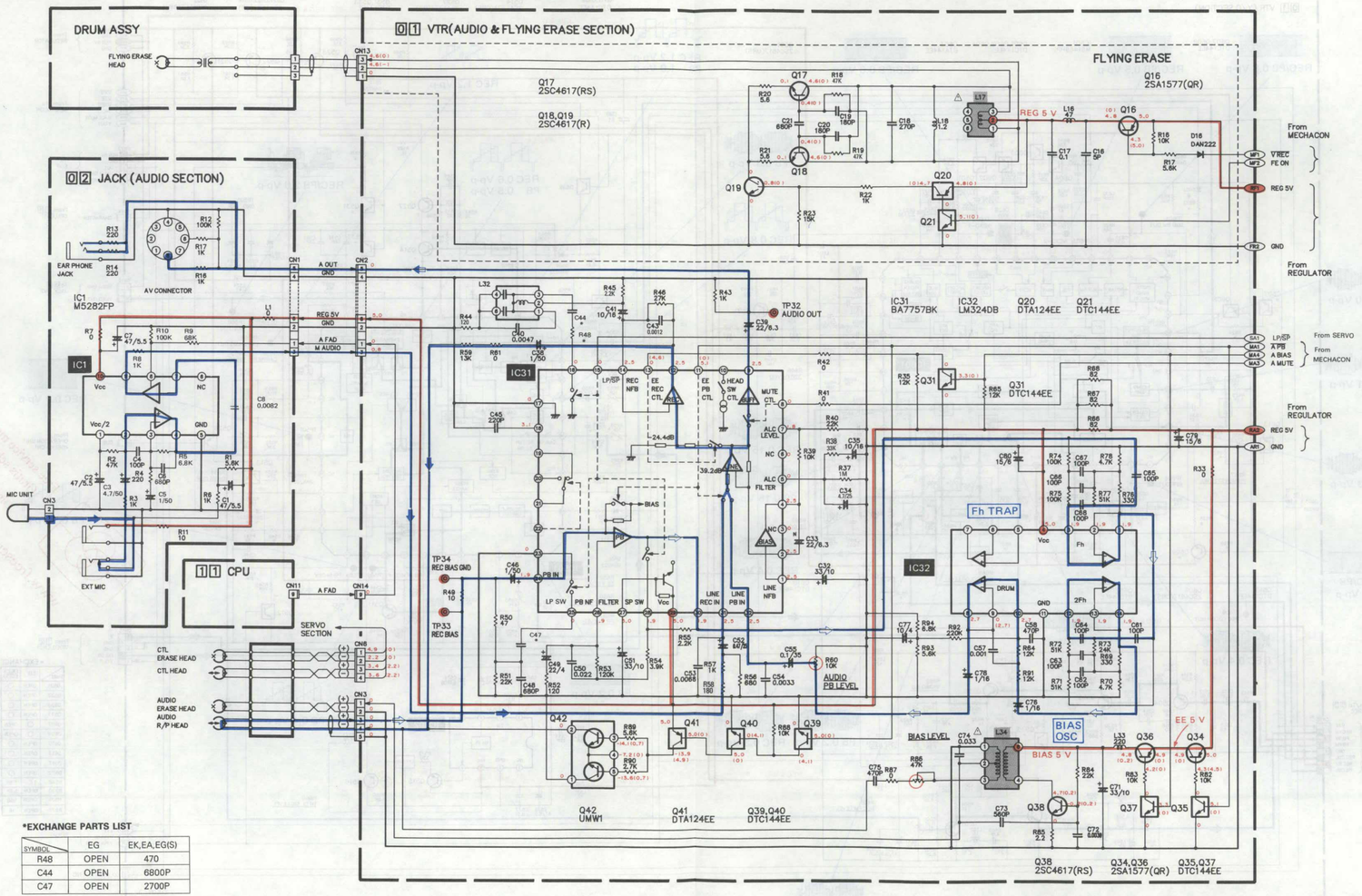
Digitized by WWW.FREESERVICEMANUALS.INFO

5.7 AUDIO SCHEMATIC DIAGRAM

● Voltage
REC : Y/C separator input, color bar SP mode, VHS mode.
PB : Alignment tape, color bar SP mode, VHS mode.
*Where voltage differ between recording and palyback, the voltage during playback is shown in parenthesis.

● Shaded ( ) parts are critical for safety.
Replace only with specified part numbers.

● SIGNAL PATH
REC
PB
REC & PB

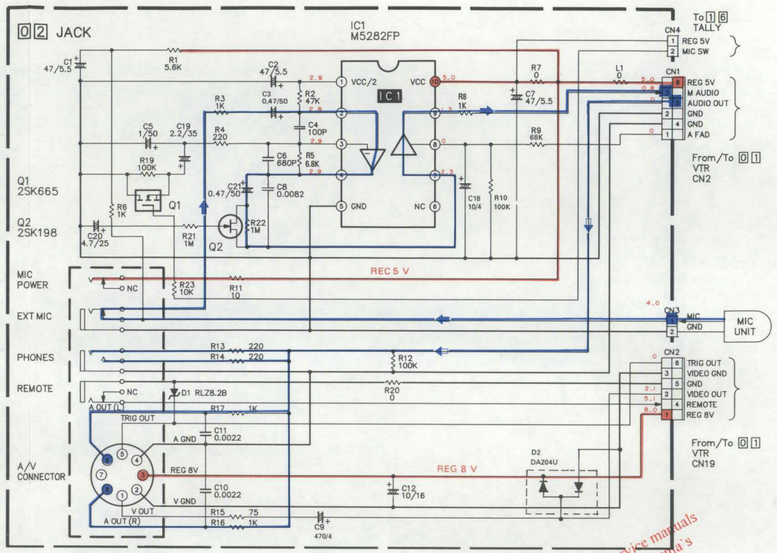


*EXCHANGE PARTS LIST

SYMBOL	EG	EK,EA,EG(S)
R48	OPEN	470
C44	OPEN	6800P
C47	OPEN	2700P

5.8 JACK SCHEMATIC DIAGRAM

● SIGNAL PATH
REC
REC & PB



Free service manuals
Gratis schema's
Digitized by
www.freeservicemanuals.info

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

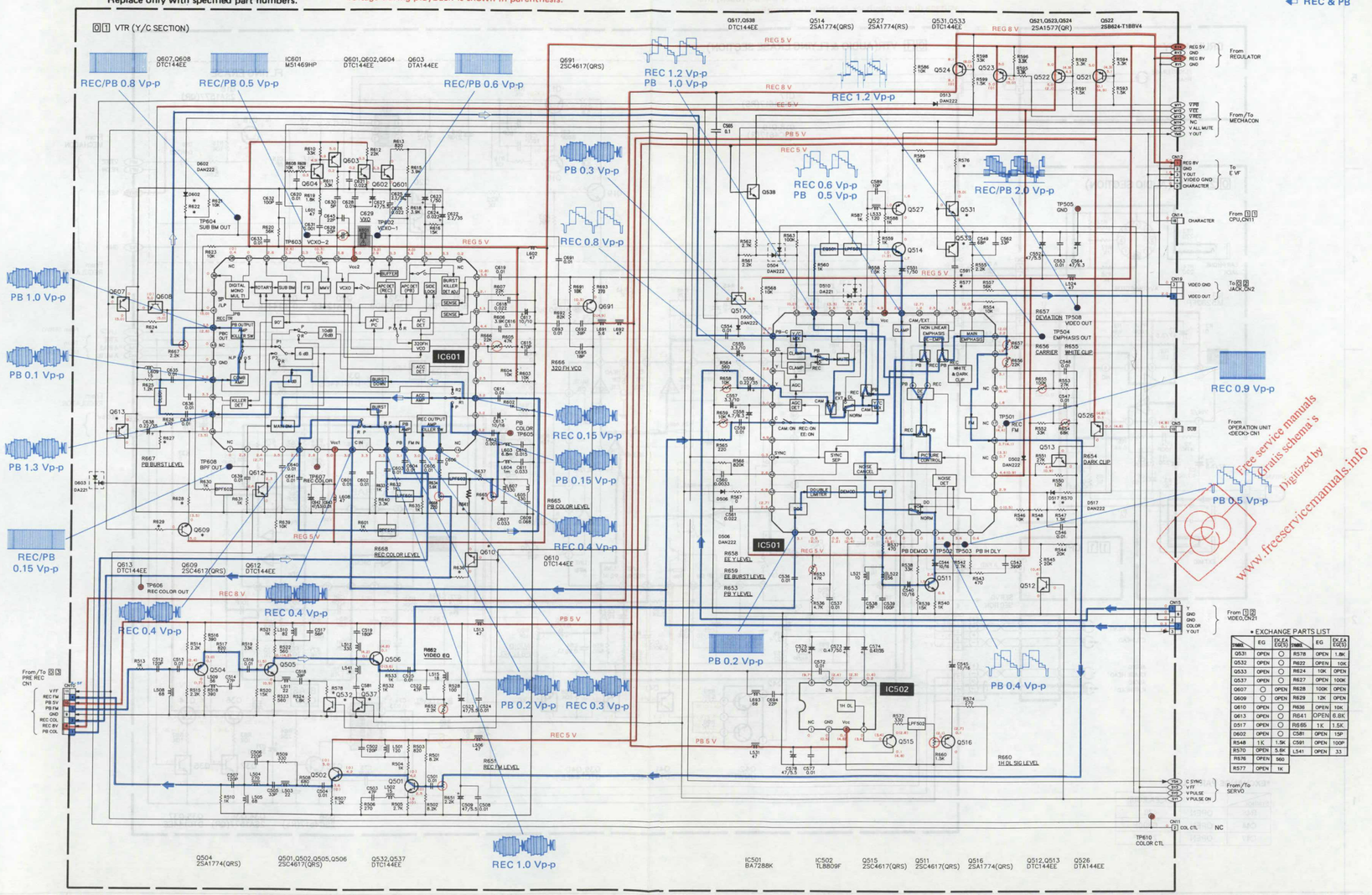
5.9 Y/C SCHEMATIC DIAGRAM

- Shaded ( ) parts are critical for safety. Replace only with specified part numbers.

- Voltage
  REC : Y/C separator input, color bar SP mode, VHS mode.
  PB : Alignment tape, color bar SP mode, VHS mode.
  *Where voltage differ between recording and palyback, the voltage during playback is shown in parenthesis.

- Waveform
  REC : Y/C separator input, color bar SP mode, VHS mode.
  PB : Alignment tape, color bar SP mode, VHS mode.

- SIGNAL PATH
  REC
  PB
  REC & PB



• EXCHANGE PARTS LIST

	EG	DK,EA EQ(S)		EG	DK,EA EQ(S)
Q531	OPEN	○	R578	OPEN	1.8K
Q532	OPEN	○	R622	OPEN	10K
Q533	OPEN	○	R624	10K	OPEN
Q537	OPEN	○	R627	OPEN	100K
Q607	○	OPEN	R628	100K	OPEN
Q609	○	OPEN	R629	12K	OPEN
Q610	OPEN	○	R636	OPEN	10K
Q613	OPEN	○	R641	OPEN	6.8K
D517	OPEN	○	R665	1K	1.5K
D602	OPEN	○	C581	OPEN	15P
R548	1K	1.5K	C591	OPEN	100P
R570	OPEN	5.6K	L541	OPEN	33
R576	OPEN	560			
R577	OPEN	1K			

free service manuals
Gratis schema's
Digitized by
www.freeservicemanuals.info

Published in Heiloo, Holland.

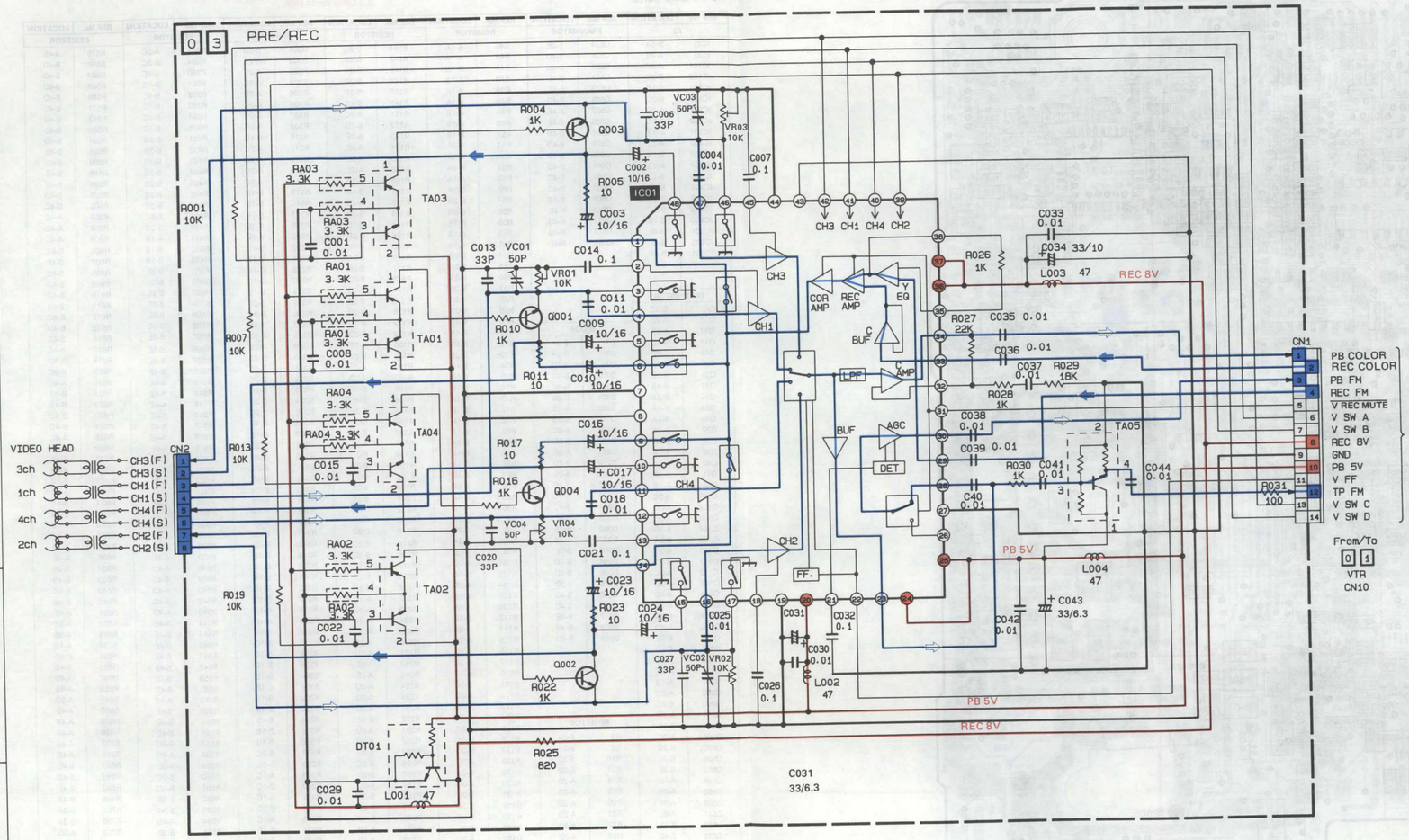
www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

5.10 PRE/REC SCHEMATIC DIAGRAM

NOTE: This schematic diagram is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.

• SIGNAL PATH
⬅ REC
⇦ PB



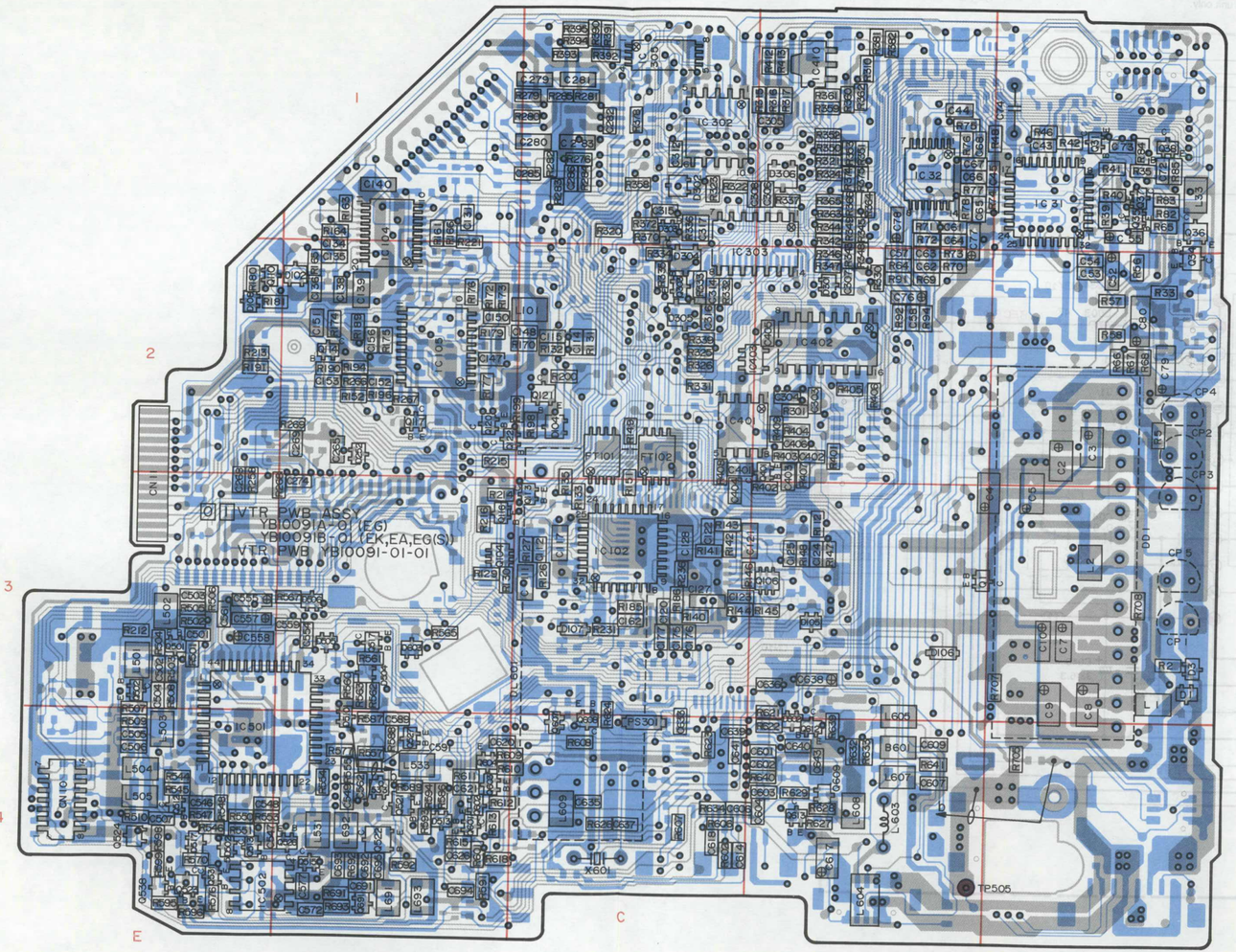
Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

5.11 VTR CIRCUIT BOARD

— Rear —
(B)



• Address of chip parts
A-1D
Address
A : Discrete parts side
B : Chip parts side

• Only chip parts

REF No.	LOCATION
IC	
IC31	B-1A
IC32	B-1B
IC101	A-3C
IC102	B-3C
IC104	B-1D
IC105	B-2D
IC251	A-2D
IC252	A-1C
IC301	A-1B
IC302	A-1C
IC303	B-1C
IC304	A-2B
IC305	B-1C
IC401	B-2C
IC402	B-2B
IC403	B-2C
IC410	B-1B
IC501	B-4E
IC502	B-4E
IC601	A-4C
TRANSISTOR	
Q1	B-3B
Q16	A-2D
Q17	A-2D
Q18	A-2D
Q19	A-2D
Q20	A-2D
Q21	A-2D
Q31	B-1A
Q34	B-2A
Q35	B-1A
Q36	B-1A
Q37	B-1A
Q38	B-1A
Q39	A-1A
Q40	A-1A
Q41	A-1A
Q42	A-1B
Q101	A-3C
Q102	A-3C
Q103	A-3C
Q104	B-3D
Q106	B-3B
Q110	B-2E
Q111	A-2D
Q112	A-3C
Q113	B-3C
Q114	B-2D
Q116	B-3D
Q117	B-2D
Q120	B-2D
Q121	B-2C
Q122	B-2D
Q123	A-3C
Q124	A-3C
Q301	A-1B
Q302	A-2C
Q303	B-2C
Q304	A-2C
Q305	A-1C
Q306	A-2C
Q401	B-2B
Q501	B-3E
Q502	B-3E
Q504	A-4E
Q505	A-4E
Q506	A-3E
Q511	A-4D
Q512	B-4E
Q513	B-4E
Q514	A-3D
Q515	B-4D
Q516	A-4D
Q517	B-3D
Q521	B-4D
Q522	B-4D
Q523	B-4E

REF No.	LOCATION
TRANSISTOR	
Q524	B-4E
Q526	B-4D
Q527	B-4D
Q531	B-4E
Q532	A-4E
Q533	B-4D
Q537	A-4E
Q538	B-4E
Q601	B-4D
Q602	B-4D
Q603	B-4D
Q604	B-4D
Q607	B-4C
Q608	B-4C
Q609	B-4B
Q610	A-4E
Q612	B-4B
Q613	B-4B
Q691	B-4D
DIODE	
D1	B-3A
D3	B-3A
D16	A-2D
D102	B-2D
D103	B-3C
D104	B-2C
D105	B-3B
D106	B-3B
D107	B-3C
D108	B-2E
D251	A-3E
D252	B-2D
D301	B-2B
D302	B-1C
D303	B-1C
D304	B-2C
D305	B-2C
D306	B-1B
D307	A-2B
D502	B-3E
D504	B-3D
D505	B-3D
D506	B-3D
D510	B-4D
D513	B-4D
D517	B-4E
D602	B-4B
D603	B-3D
RESISTOR	
R2	B-3A
R5	B-2A
R16	A-2D
R17	A-2D
R18	A-2D
R19	A-2D
R20	A-2D
R21	A-2D
R22	A-2D
R23	A-2D
R33	B-2A
R35	B-1A
R37	A-1A
R38	A-2A
R39	B-1A
R40	B-1A
R41	B-1A

REF No.	LOCATION
RESISTOR	
R42	B-1A
R43	A-1A
R44	A-1B
R45	A-1B
R46	B-1A
R48	B-1A
R49	A-1B
R50	A-1B
R51	A-1B
R52	A-2A
R53	A-1A
R54	A-1A
R55	A-1A
R56	B-2A
R57	B-2A
R58	B-2A
R59	A-1B
R60	A-1B
R61	A-1A
R64	B-2B
R65	B-1A
R66	B-2A
R67	B-2A
R68	B-2A
R69	B-2B
R70	B-2B
R71	B-1B
R72	B-1B
R73	B-2B
R74	B-1A
R75	B-1B
R76	B-1B
R77	B-1B
R78	B-1B
R82	B-1A
R83	B-1A
R84	B-1A
R85	B-1A
R86	A-1A
R87	A-1A
R88	A-1A
R89	A-1A
R90	A-1A
R91	B-2B
R92	B-2B
R93	A-2A
R94	B-2B
R101	A-3C
R103	A-3B
R104	A-3B
R107	A-3B
R108	A-3B
R112	B-3B
R114	A-3C
R115	A-3C
R116	A-3C
R117	A-3C
R120	A-3C
R121	A-3C
R122	A-3C
R123	A-3C
R124	A-3C
R125	A-3C
R126	B-3C
R127	B-3C
R128	A-3C
R129	B-3D
R130	B-3D
R131	B-2C
R132	B-2C
R133	B-3C
R135	B-2C
R136	A-3C
R137	A-2C
R138	A-3C
R139	A-2C
R140	B-3C
R141	B-3C
R142	B-3C
R143	B-3C

REF No.	LOCATION
RESISTOR	
R144	B-3C
R145	B-3B
R146	B-3C
R147	B-3B
R148	B-3B
R149	B-2C
R151	B-3C
R152	B-2D
R153	A-2E
R154	A-3E
R155	A-3E
R156	A-2C
R160	A-1D
R161	B-1D
R162	A-1D
R163	B-1D
R164	B-1D
R165	B-2D
R166	B-1D
R170	B-2C
R172	B-2D
R173	B-2D
R174	B-2D
R175	B-2D
R176	B-2D
R177	B-2D
R179	B-2D
R180	B-2E
R181	B-2E
R182	A-2E
R183	A-2D
R185	B-3C
R186	B-3C
R188	A-2E
R189	B-2D
R190	B-2D
R191	B-2E
R194	B-2D
R196	B-2D
R198	B-2C
R199	B-2C
R200	B-2C
R212	B-3E
R213	B-2E
R214	B-3D
R215	B-2D
R216	B-3D
R217	A-1D
R221	B-2D
R231	B-3C
R232	A-3C
R233	A-3C
R234	A-3C
R235	A-3C
R236	B-3C
R251	A-2D
R252	A-2E
R253	A-2E
R254	A-2D
R255	A-2D
R257	A-3D
R258	B-3E
R261	A-3D
R262	A-3D
R263	A-2D
R264	A-2C
R266	B-2D
R267	B-2D
R268	B-3D
R269	B-2D
R276	B-1C
R277	A-1D
R278	A-1D
R279	B-1C
R280	B-1C
R281	B-1C
R282	B-1C
R283	B-1C
R284	B-1C
R285	B-1C

REF No.	LOCATION
RESISTOR	
R301	B-2B
R302	A-2C
R303	A-2C
R304	A-2C
R305	A-2C
R306	A-2C
R307	A-2C
R309	A-2C
R310	B-1B
R311	A-2C
R312	A-2C
R313	A-2C
R314	A-1C
R315	B-1B
R316	B-1B
R317	B-1B
R318	A-1C
R319	A-2C
R320	B-1C
R321	B-1B
R322	B-1C
R323	B-1C
R324	B-1B
R325	B-2C
R326	B-2C
R327	A-1B
R328	A-1B
R329	A-2B
R330	B-2B
R331	B-2C
R332	B-2C
R333	B-2C
R334	B-2C
R335	B-2C
R336	B-1C
R337	B-1B
R339	B-2C
R340	A-2C
R341	A-2C
R342	B-1B
R343	B-2B
R344	B-1B
R345	B-1B
R346	B-2B
R347	B-2B
R348	B-2B
R349	B-1B
R350	B-1B
R351	B-1B
R352	B-1B
R353	B-1B
R354	A-1B
R355	A-1C
R356	A-1C
R357	A-1C
R358	B-1C
R359	B-1B
R360	B-1B
R361	B-1B
R362	B-1B
R363	B-1B
R364	B-1B
R365	B-1B
R366	B-1B
R367	A-2C
R368	A-2C
R369	A-1C
R370	B-1C
R371	A-1C
R372	B-1C
R373	A-1C
R374	B-1B
R375	B-1B
R376	A-1C
R377	A-1C
R378	B-1C
R379	A-2C
R308	A-2C
R381	B-1B
R382	B-1B

REF No.	LOCATION
RESISTOR	
R383	A-2C
R384	A-2C
R390	B-1C
R391	B-1C
R392	B-1C
R393	B-1C
R394	B-1C
R395	B-1C
R401	B-2B
R402	B-3B
R403	B-2B
R404	B-2B
R405	B-2B
R406	B-2B
R407	B-2B
R408	B-2C
R409	B-2B
R411	A-1B
R412	B-1B
R413	B-1B
R501	B-3E
R502	B-3E
R503	B-3E
R504	B-3E
R505	B-3E
R506	B-3E
R507	B-3E
R508	B-3E
R509	B-4E
R510	B-4E
R513	A-4E
R514	A-4E
R515	A-4E
R516	A-4E
R517	A-4E
R518	A-4E
R519	A-4E
R520	A-4E
R521	A-4E
R522	A-4E
R523	A-4E
R524	A-4E
R528	A-3E
R532	A-4E
R536	A-4E
R336	A-3E
R537	A-4E
R538	A-4D
R539	A-4D
R540	A-4D
R542	A-4D
R543	A-4D
R544	B-4E
R545	B-4E
R546	B-4E
R547	B-4E
R548	B-4E
R550	B-4E
R551	B-4E
R552	A-4D
R553	B-4E
R554	B-4D
R555	B-4D
R557	B-4D
R558	A-4D
R559	A-3D
R560	B-3D
R561	B-3D
R562	B-3D
R563	B-3D
R564	A-4B
R565	B-3D
R566	A-3E
R567	B-3D
R568	A-3D
R570	B-4E
R572	A-4D
R574	A-4D
R576	B-4E
R577	B-4D

REF No.	LOCATION
RESISTOR	
R578	A-4E
R586	B-4D
R587	B-4D
R588	B-4D
R589	B-4D
R591	B-4D
R592	B-4D
R593	B-4D
R594	B-4D
R595	B-4E
R596	B-4E
R598	B-4E
R599	B-4E
R601	B-4D
R602	B-4C
R603	A-4C
R604	A-4C
R605	A-4C
R606	B-4C
R607	B-4C
R608	B-4C
R609	B-4D
R610	B-4D
R611	B-4D
R612	B-4D
R613	B-4D
R615	B-4D
R616	A-4C
R618	B-4D
R619	A-3C
R620	A-4C
R621	B-3B
R622	B-4B
R623	B-4C
R624	B-4C
R625	A-4C
R626	B-4C
R627	B-4B
R628	B-4B
R629	B-4B
R630	A-4D
R631	A-4C
R632	B-4B
R633	B-4B
R634	B-4C
R635	A-4B
R636	A-4E
R637	A-4B
R639	B-4B
R640	B-4B
R641	B-4B
R651	A-4E
R652	A-3E
R653	A-3E
R654	A-4D
R655	A-4D
R656	A-4D
R657	A-4D
R658	A-4B
R659	A-3D
R660	A-4E
R665	A-4B
R666	A-4C
R667	A-4B
R668	A-4E
R691	B-4D
R692	B-4D
R693	B-4D
R705	B-4A
R707	B-3A
R708	B-3A
R710	A-3D

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

● Address of chip parts
A-1D
Address
A : Discrete parts side
B : Chip parts side

REF No.	LOCATION
CAPACITOR	
C2	B-2A
C3	B-2A
C4	B-3A
C5	B-3A
C7	B-3A
C8	B-3A
C9	B-3A
C10	B-3A
C16	A-2D
C17	A-2D
C18	A-2D
C19	A-2D
C20	A-2D
C21	A-2D
C32	A-2A
C33	A-2A
C34	A-2A
C35	A-2A
C38	A-1A
C39	A-1A
C40	A-1B
C41	A-1B
C43	B-1A
C44	B-1B
C45	B-1B
C46	A-2B
C47	A-1A
C48	A-1B
C49	A-2A
C50	A-1A
C51	A-1A
C52	B-2A
C53	B-2A
C54	B-2A
C55	B-1A
C57	B-2B
C58	B-2B
C61	B-1B
C62	B-2B
C63	B-2B
C64	B-1B
C65	B-1B
C66	B-1B
C67	B-1B
C68	B-1B
C71	A-1A
C72	B-1A
C73	B-1A
C75	A-1A
C76	B-2B
C76	B-2B
C77	B-1B
C78	B-1B
C79	B-2A
C80	B-2A
C101	A-3B
C102	A-3B
C103	A-3C
C105	A-3C
C106	A-3B
C110	A-3C
C111	B-3C
C112	B-3C
C113	A-3C
C114	B-2C
C115	B-2C
C117	B-3C
C120	B-3C
C121	B-3C
C122	B-3C
C123	B-3C
C124	B-3B
C125	B-3B
C127	B-3C
C128	B-3C
C130	A-1D
C131	B-1D
C132	A-1D
C134	B-2D

REF No.	LOCATION
CAPACITOR	
C135	B-2D
C136	B-2D
C138	B-2D
C139	B-2D
C140	B-1D
C141	A-1D
C147	B-2D
C148	B-2C
C150	B-2D
C151	B-2D
C152	B-2D
C153	B-2D
C155	A-2D
C156	B-2D
C160	A-2E
C161	A-2D
C162	B-3C
C175	B-3C
C176	B-3C
C177	B-3C
C178	A-3C
C251	A-2E
C252	A-3E
C253	A-2D
C255	A-2E
C257	A-2D
C258	A-2D
C259	A-3D
C260	A-3D
C261	A-3D
C265	B-2D
C266	A-3D
C267	A-3D
C268	B-3E
C269	B-2D
C274	B-3D
C276	A-1D
C277	A-1D
C278	A-1D
C279	B-1C
C280	B-1C
C281	B-1C
C282	B-1C
C283	B-1C
C285	B-1C
C286	B-1C
C301	A-2B
C302	A-2B
C303	B-2B
C304	B-2B
C305	B-1B
C306	B-1B
C307	B-2B
C308	B-1B
C309	A-2C
C310	A-2C
C311	A-2C
C312	B-1C
C313	A-4C
C314	B-2C
C315	B-1C
C316	B-2C
C317	B-1C
C401	B-2C
C402	B-2B
C403	B-2B
C404	B-3C
C405	B-2B
C406	B-2B
C501	B-3E
C502	B-3E
C503	B-3E
C504	B-3E
C505	B-4E
C506	B-4E
C507	B-4E
C508	A-4E
C509	A-4E
C512	A-4E

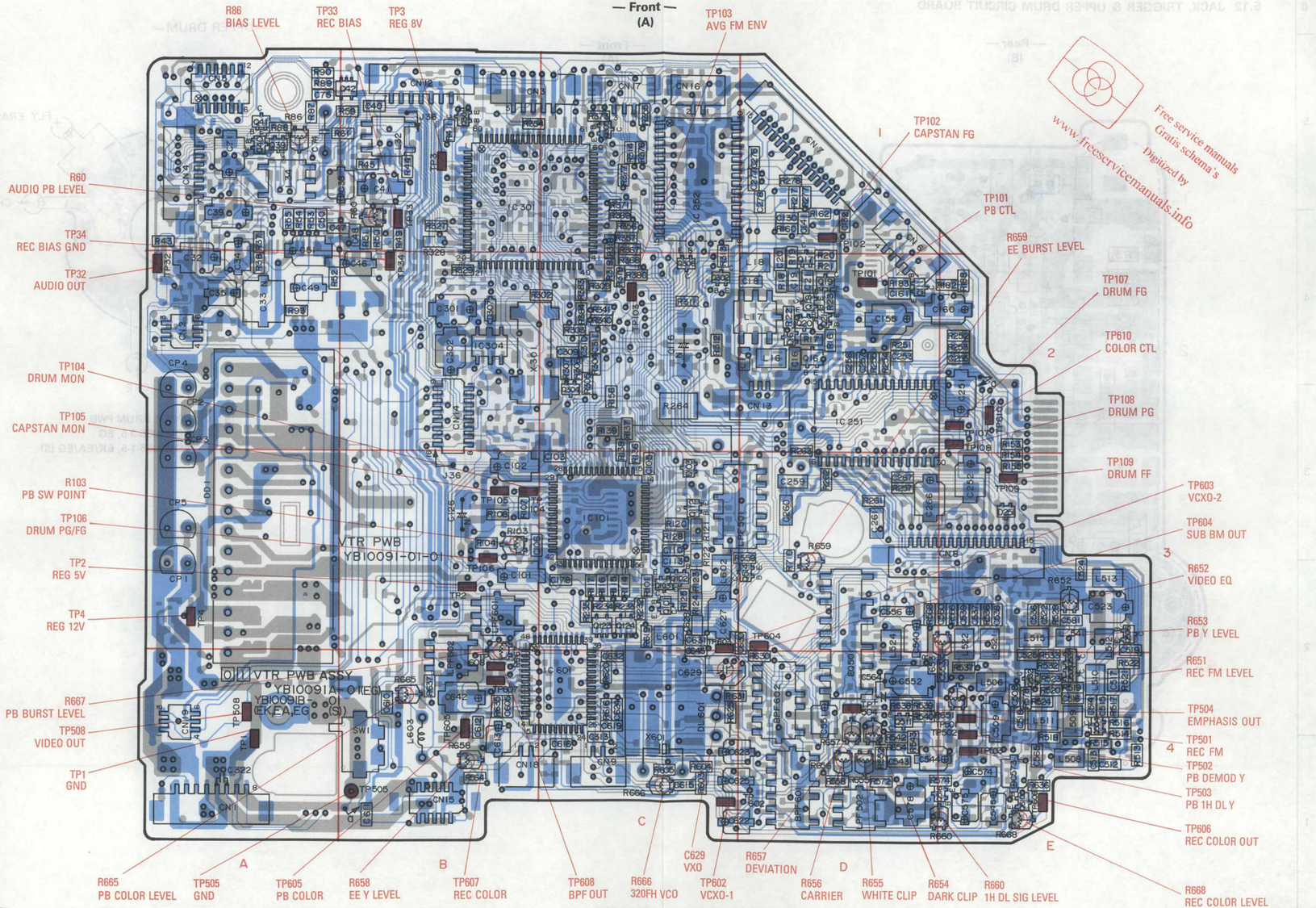
REF No.	LOCATION
CAPACITOR	
C513	A-4E
C514	A-4E
C516	A-4E
C517	A-4E
C518	A-4E
C519	A-3E
C522	A-3E
C523	A-3E
C524	A-3E
C525	A-4E
C536	A-3E
C537	A-3E
C538	A-3E
C539	A-3E
C540	A-3D
C543	A-4D
C544	A-4D
C545	A-4E
C546	B-4E
C547	B-4E
C548	B-4E
C549	B-4D
C551	A-4D
C552	A-4D
C553	A-4E
C554	B-3D
C555	B-3E
C556	A-3D
C557	B-3E
C558	B-3E
C559	B-3D
C560	A-3E
C561	B-3E
C562	B-4D
C565	A-4E
C572	B-4D
C573	A-4E
C574	A-4E
C575	A-4E
C577	B-4D
C578	A-4D
C581	A-3E
C589	B-4D
C591	B-4D
C601	B-4B
C602	B-4B
C603	B-4B
C604	B-4B
C605	A-4B
C606	B-4C
C607	B-4B
C609	B-4B
C610	A-4B
C611	A-4B
C612	A-4B
C613	A-4B
C614	B-4C
C615	A-4C
C616	A-4C
C617	B-4B
C618	B-4C
C619	A-4C
C620	B-4D
C621	B-4D
C622	A-4C
C623	A-4C
C624	A-4C
C625	A-4C
C626	B-4D
C627	A-3C
C628	A-3C
C629	A-4C
C630	A-3D
C631	A-3C
C632	A-4C
C633	B-4C
C635	B-4C
C636	B-3B
C637	B-4C

REF No.	LOCATION
CAPACITOR	
C638	B-3B
C639	B-4C
C640	B-4B
C641	B-4C
C642	A-4B
C643	B-4B
C645	A-4C
C691	B-4D
C692	B-4D
C693	B-4D
C694	B-4D
C695	B-4D
COIL	
L1	B-3A
L2	B-3A
L16	A-2D
L17	A-2D
L18	A-2D
L32	A-1B
L33	B-1A
L34	A-1A
L101	B-2C
L501	B-3E
L502	B-3E
L503	B-4E
L504	B-4E
L505	B-4E
L506	A-4E
L508	A-4E
L509	A-4E
L510	A-4E
L511	A-4E
L512	A-3E
L513	A-3E
L515	A-3E
L521	A-3E
L522	A-3E
L524	A-3D
L531	B-4D
L533	B-4D
L541	A-3E
L601	A-3C
L602	A-3C
L604	B-4B
L605	B-4B
L607	B-4B
L608	B-4B
L609	B-4C
L691	B-4D
L692	B-4D
L693	B-4D
TRAP	
TRAP1	B-2C
TRAP2	B-2C
LPF	
LPF501	A-3D
LPF502	A-4D
LPF601	A-3B
LPF602	A-4B
BPF	
BPF601	A-4D
BPF602	A-4D
CRYSTAL	
X301	A-2B

REF No.	LOCATION
SW	
SW1	A-4B
LED	
PS301	B-4C
EQUALIZER	
EQ501	A-4D
TP	
TP1	A-4A
TP2	A-3B
TP3	A-1B
TP4	A-3A
TP32	A-2A
TP33	A-1B
TP34	A-2B
TP101	A-2D
TP102	A-1D
TP103	A-2C
TP104	A-3B
TP105	A-3B
TP106	A-3B
TP107	A-2E
TP108	A-2E
TP109	A-3E
TP501	A-4E
TP502	A-4E
TP503	A-4E
TP504	A-4D
TP506	A-4E
TP507	A-4E
TP508	A-4A
TP602	A-4C
TP603	A-3C
TP604	A-3D
TP605	A-4B
TP606	A-4E
TP607	A-4B
TP608	A-4B
TP610	A-2E
CONNECTOR	
CN1	A-4A
CN2	A-2A
CN3	A-1B
CN4	A-1A
CN5	A-1A
CN6	A-1D
CN7	A-1D
CN8	A-3E
CN9	A-4C
CN10	B-4E
CN12	A-1B
CN13	A-2D
CN14	A-2B
CN15	A-4B
CN16	A-1C
CN17	A-1C
CN18	A-4B
CN19	A-4A

* EXCHANGE PARTS LIST

Symbol	EG	EK/EA /EG(S)
Q531	x	O
Q532	x	O
Q533	x	O
Q537	x	O
Q607	O	x
Q609	O	x
Q610	x	O
Q613	x	O
D517	x	O
D602	x	O
R48	x	O
R318	O	x
R319	x	O
R570	x	O
R576	x	O
R577	x	O
R578	x	O
R622	x	O
R624	O	x
R627	x	O
R628	O	x
R629	O	x
R636	x	O
R641	x	O
C44	x	O
C47	x	O
C591	x	O
L541	x	O



Free service manuals
Gratis schema's
Digitized by
www.freeservicemanuals.info

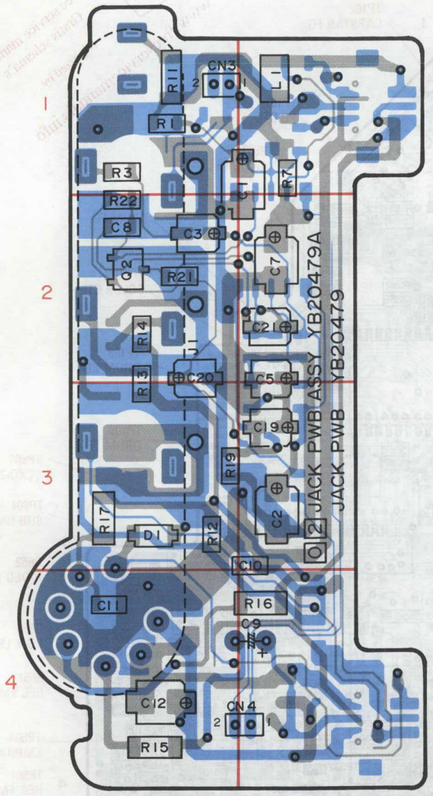
Published in Heiloo, Holland.

www.freeservicemanuals.info

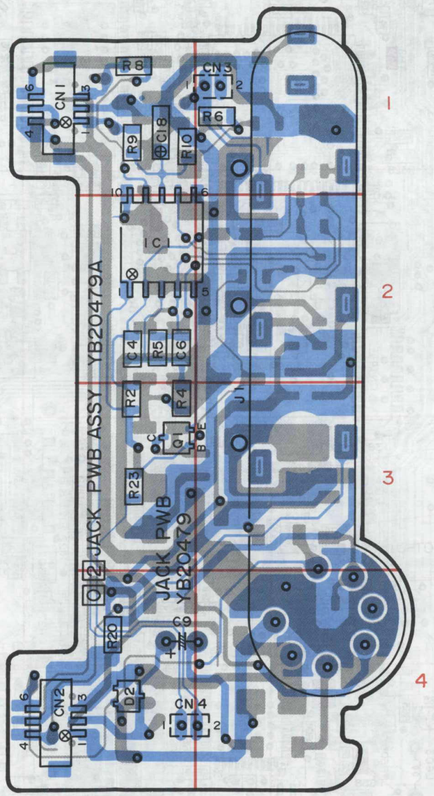
Digitized by WWW.FREESERVICEMANUALS.INFO

5.12 JACK, TRIGGER & UPPER DRUM CIRCUIT BOARD

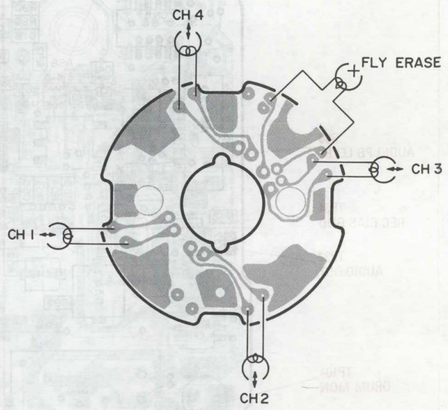
— Rear —
(B)



— Front —
(A)

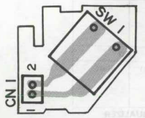


—UPPER DRUM—



40 UPPER DRUM PWB
YDM3055-3-5, EG
YDM3055-1-5, EK/EA/EG (S)

— TRIGGER —



05 TRIGGER PWB ASSY YB20360A-01
TRIGGER PWB YB20360-01-01

• Address of chip parts
A-1D
Address
A : Discrete parts side
B : Chip parts side

• Only chip parts

JACK BOARD ASSEMBLY <02>

REF No.	LOCATION
IC	
IC1	A–2A

REF No.	LOCATION
TRANSISTOR	
Q1	A–3A
Q2	B–2B

REF No.	LOCATION
DIODE	
D1	B–3B
D2	A–4A

REF No.	LOCATION
RESISTOR	
R1	B–1B
R2	A–3A
R3	B–1B
R4	A–3A
R5	A–2A
R6	A–1B
R7	B–1A
R8	A–1A
R9	A–1A
R10	A–1A
R11	B–1B
R12	B–3B
R13	B–2B
R14	B–2B
R15	B–4B
R16	B–4A
R17	B–3B
R19	B–3B
R20	A–4A
R21	B–2B
R22	B–2B
R23	A–3A

REF No.	LOCATION
CAPACITOR	
C1	B–1A
C2	B–3A
C3	B–2B
C4	A–2A
C5	B–2A
C6	A–2A
C7	B–2A
C8	B–2B
C10	B–3A
C11	B–4B
C12	B–4B
C18	A–1A
C19	B–3A
C20	B–2B
C21	B–2A

REF No.	LOCATION
COIL	
L1	B–1A

REF No.	LOCATION
CONNECTOR	
CN1	A–1A
CN2	A–4A

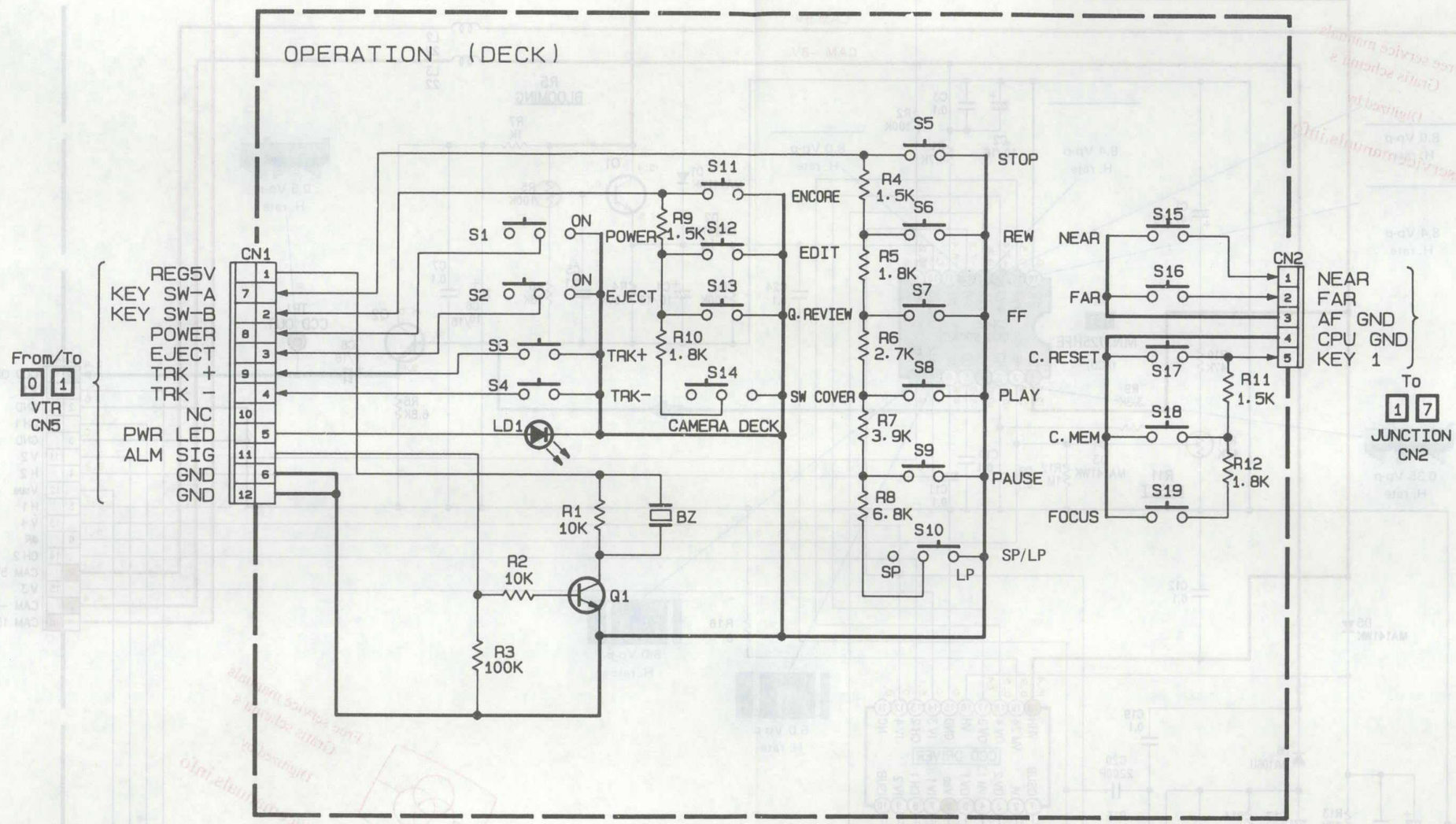
Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

5.13 OPERATION (DECK) SCHEMATIC DIAGRAM

NOTE: This schematic diagram is only for reference.
avoid replacing individual parts.
Replace the entire unit only.

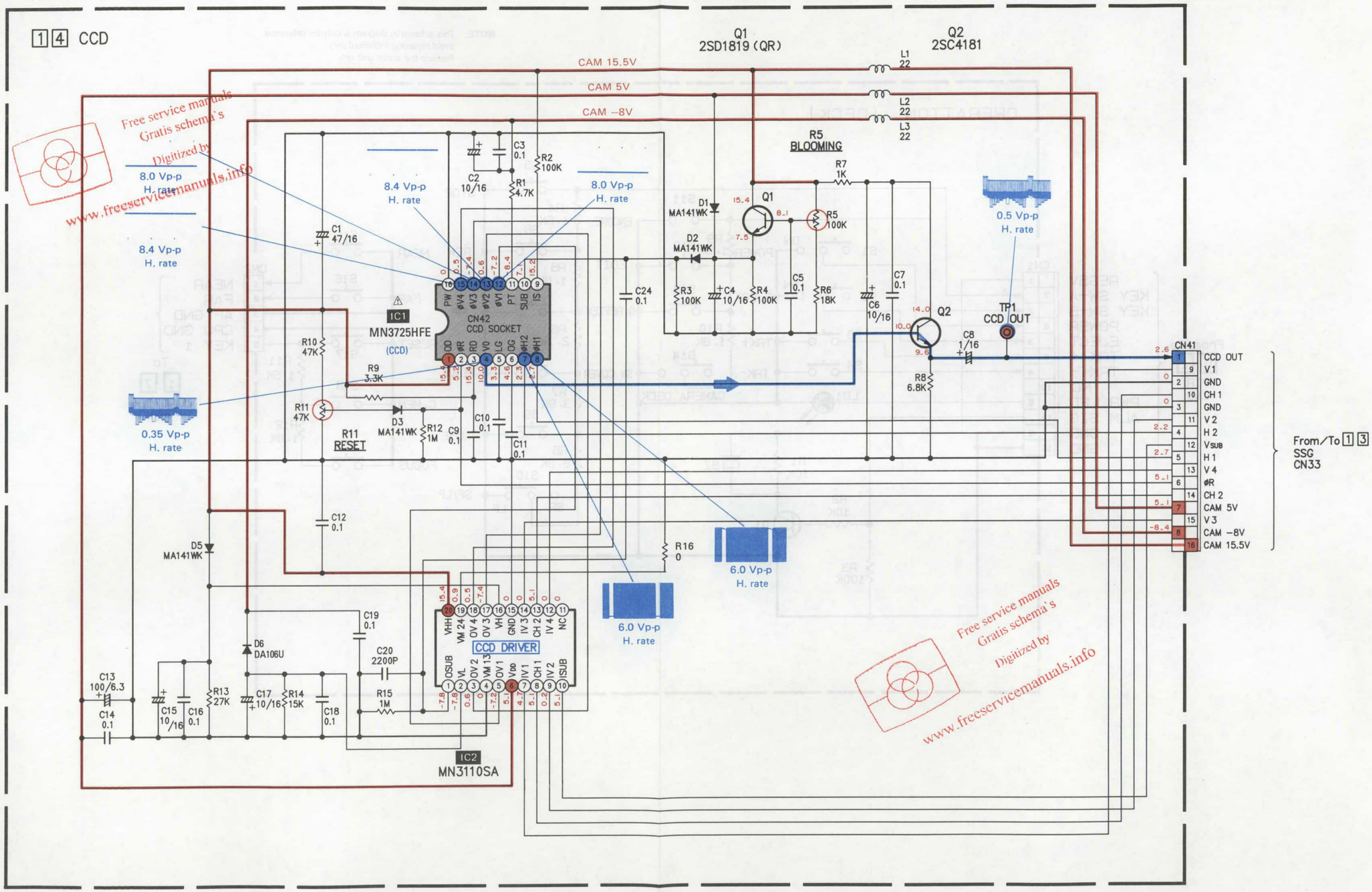


Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

5.14 CCD SCHEMATIC DIAGRAM

- Voltage: Measured as the color bar pattern which lighted up brightly is shot in the Rehersal mode.
- Shaded (▒) parts are critical for safety. Replace only with specified part numbers.
- Waveform: Measured as the gray scale or color bar pattern which light up brightly is shot in the Rehersal mode.
- SIGNAL PATH ⬅ Y



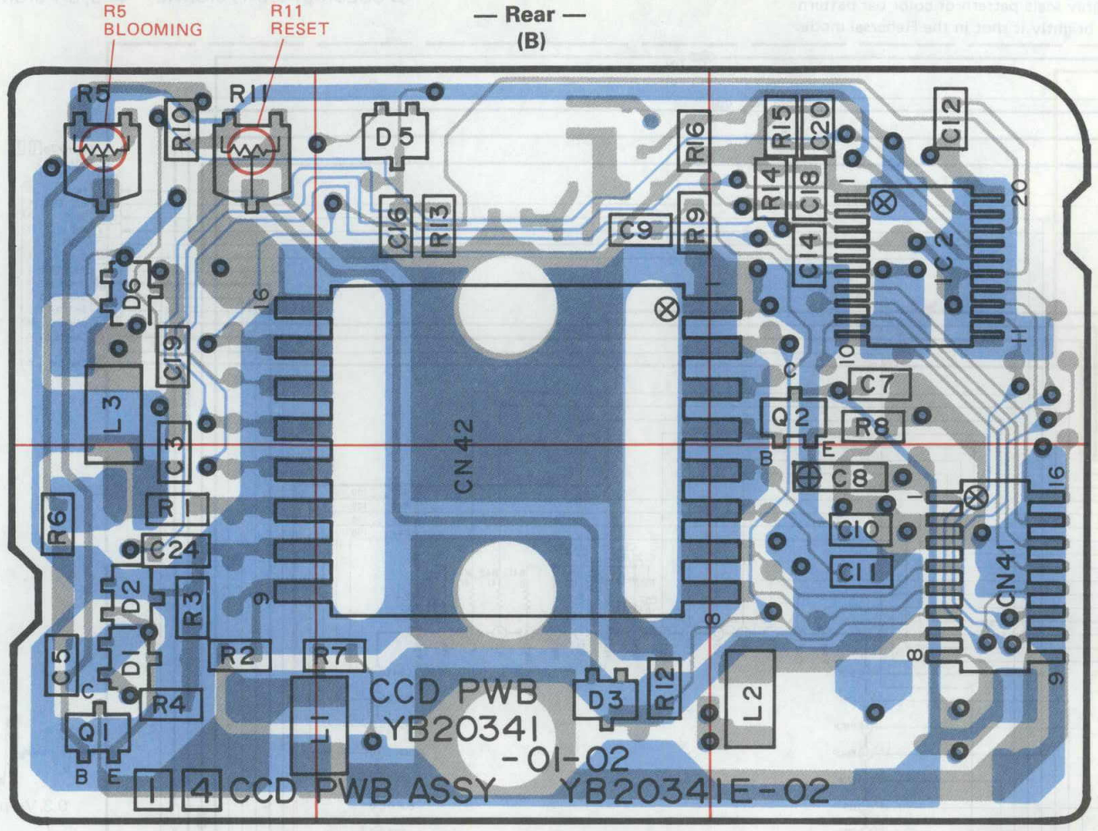
Digitized by WWW.FREESERVICEMANUALS.INFO

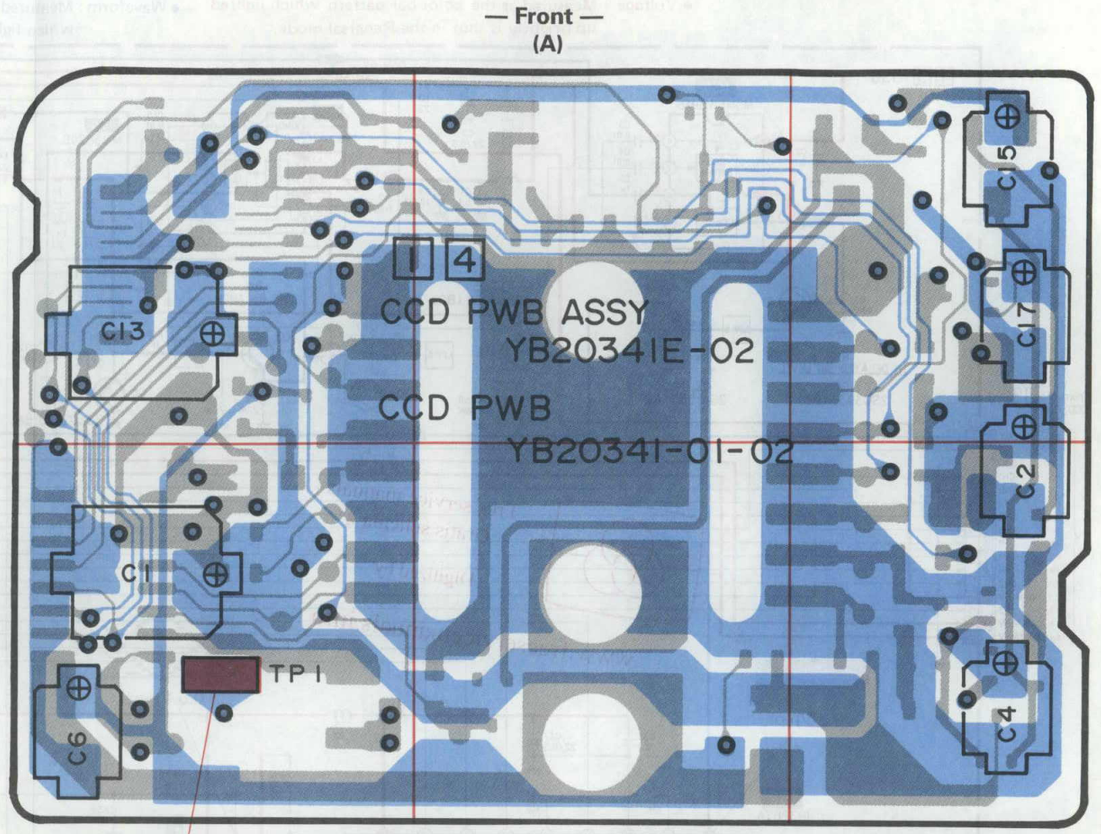
Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

5.15 CCD CIRCUIT BOARD





• Address of chip parts
A-1D
Address
A : Discrete parts side
B : Chip parts side

• Only chip parts

REF No.	LOCATION
IC	
IC2	B–1A

REF No.	LOCATION
TRANSISTOR	
Q1	B–2C
Q2	B–1A

REF No.	LOCATION
DIODE	
D1	B–2C
D2	B–2C
D3	B–2B
D5	B–1B
D6	B–1C

REF No.	LOCATION
RESISTOR	
R1	B–2C
R2	B–2C
R3	B–2C
R4	B–2C
R5	B–1C
R6	B–2C
R7	B–2B
R8	B–1A
R9	B–1B
R10	B–1C
R11	B–1C
R12	B–2B
R13	B–1B
R14	B–1A
R15	B–1A
R16	B–1B

REF No.	LOCATION
CAPACITOR	
C1	A–2A
C2	A–2C
C3	B–2C
C4	A–2C
C5	B–2C
C6	A–2A
C7	B–1A
C8	B–2A
C9	B–1B
C10	B–2A
C11	B–2A
C12	B–1A
C13	A–1A
C14	B–1A
C15	A–1C
C16	B–1B
C17	A–1C
C18	B–1A
C19	B–1C
C20	B–1A
C24	B–2C

REF No.	LOCATION
COIL	
L1	B–2B
L2	B–2A
L3	B–1C

REF No.	LOCATION
TEST PIN	
TP1	A–2A

REF No.	LOCATION
CONNECTOR	
CN41	B–2A
CN42	B–2B

Published in Heiloo, Holland.

www.freeservicemanuals.info

5.16 SSG SCHEMATIC DIAGRAM

- Shaded ( ) parts are critical for safety. Replace only with specified part numbers.
- Voltage : Measured as the color bar pattern which lighted up brightly is shot in the Rehersal mode.
- Waveform : Measured as the grey scale pattern or color bar pattern which lighted up brightly is shot in the Rehersal mode.

- SIGNAL PATH
- Y SIGNAL
- COLOR (R-Y/B-Y) SIGNAL
- R, R-Y SIGNAL
- B, B-Y SIGNAL

1 3 SSG

IC3 MSM6819MS

IC4 MN3820S

IC1 MN5108 SSG

IC2 IR3P67A

Q1 2SC3936 (BC)

Q2,Q4,Q6 2SA1532 (BC)

Q3,Q5 2SC3936 (BC)

Q16 2SA1532 (BC)

Q15 2SC3936 (BC)

Q8,Q10,Q12 2SA1532 (BC)

Q9,Q11,Q13 2SC3936 (BC)

Q17,Q18 2SC3936 (BC)

R1 1H DELAYED SIG LEVEL

R8 CNR BALANCE

R12 COLOR DET BAL

R22 R/B SEPA

C49 OSC

From/To 1 4 CCD, CN41

From/To 1 1 CPU, CN13

From/To 1 2 VIDEO, CN24

0.3 Vp-p

0.5 Vp-p

0.5 Vp-p

1.1 Vp-p

0.2 Vp-p

0.2 Vp-p

0.4 Vp-p

0.25 Vp-p

0.3 Vp-p

0.2 Vp-p

Free service manuals
Gratis schema's
Digitized by
www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

Published in Heiloo, Holland.

www.freeservicemanuals.info

5.17 SSG CIRCUIT BOARD

• Address of chip parts
A-1D
Address
A : Discrete parts side
B : Chip parts side

• Only chip parts

REF No.	LOCATION
IC	
IC1	A-4B
IC2	B-3A
IC3	B-3A
IC4	A-1A

REF No.	LOCATION
TRNSISTOR	
Q1	B-2A
Q2-	B-2A
Q3	B-2B
Q4	B-1A
Q5	A-1A
Q6	B-2A
Q8	B-4B
Q9	B-1B
Q10	B-3B
Q11	A-1B
Q12	B-3B
Q13	A-1B
Q15	A-1B
Q16	B-4A
Q17	A-3A
Q18	B-3A

REF No.	LOCATION
DIODE	
D1	B-4A
D2	A-1A

REF No.	LOCATION
RESISTOR	
R1	B-2A
R2	B-2A
R3	B-2A
R4	B-2A
R5	A-1A
R6	B-1A
R7	B-1A
R8	B-1A
R9	B-2B
R10	B-2A
R11	B-2A
R12	B-2A
R13	B-4A
R14	B-3A
R15	B-3A
R16	A-3A
R17	B-4A
R18	A-1B
R19	A-1B
R21	A-3A
R22	B-2A
R23	B-2A
R24	B-4B
R25	B-1B
R26	B-1B

REF No.	LOCATION
RESISTOR	
R27	B-1B
R28	B-3B
R29	A-1B
R30	A-1B
R31	A-1B
R32	B-3B
R33	A-1B
R34	A-1B
R35	A-1B
R36	A-3B
R37	A-3B
R38	A-3B
R39	B-4B
R40	A-5B
R41	B-4B
R42	A-5B
R43	A-5B
R44	B-4B
R45	B-4B
R46	B-4B
R47	B-4B
R48	B-4B
R49	A-3A
R50	B-3A
R51	A-3A
R52	A-3A
R54	A-3B
R56	A-4A
R57	A-4A
R58	A-1B
R60	B-1A
R61	B-2B
R62	B-4B
R63	A-4B
R64	B-3A
R65	B-4A
R66	A-3A
R71	B-5A

REF No.	LOCATION
CAPACITOR	
C2	B-3A
C3	B-3A
C4	B-3A
C5	B-3A
C6	B-2A
C7	A-2A
C8	B-3A
C9	B-1A
C10	A-1A
C11	A-1A
C12	A-2A
C13	A-2A
C14	A-2A
C15	A-1A
C17	A-1A
C18	B-2A
C19	A-3A
C20	B-4A
C21	A-3A
C22	A-4A
C23	A-2A

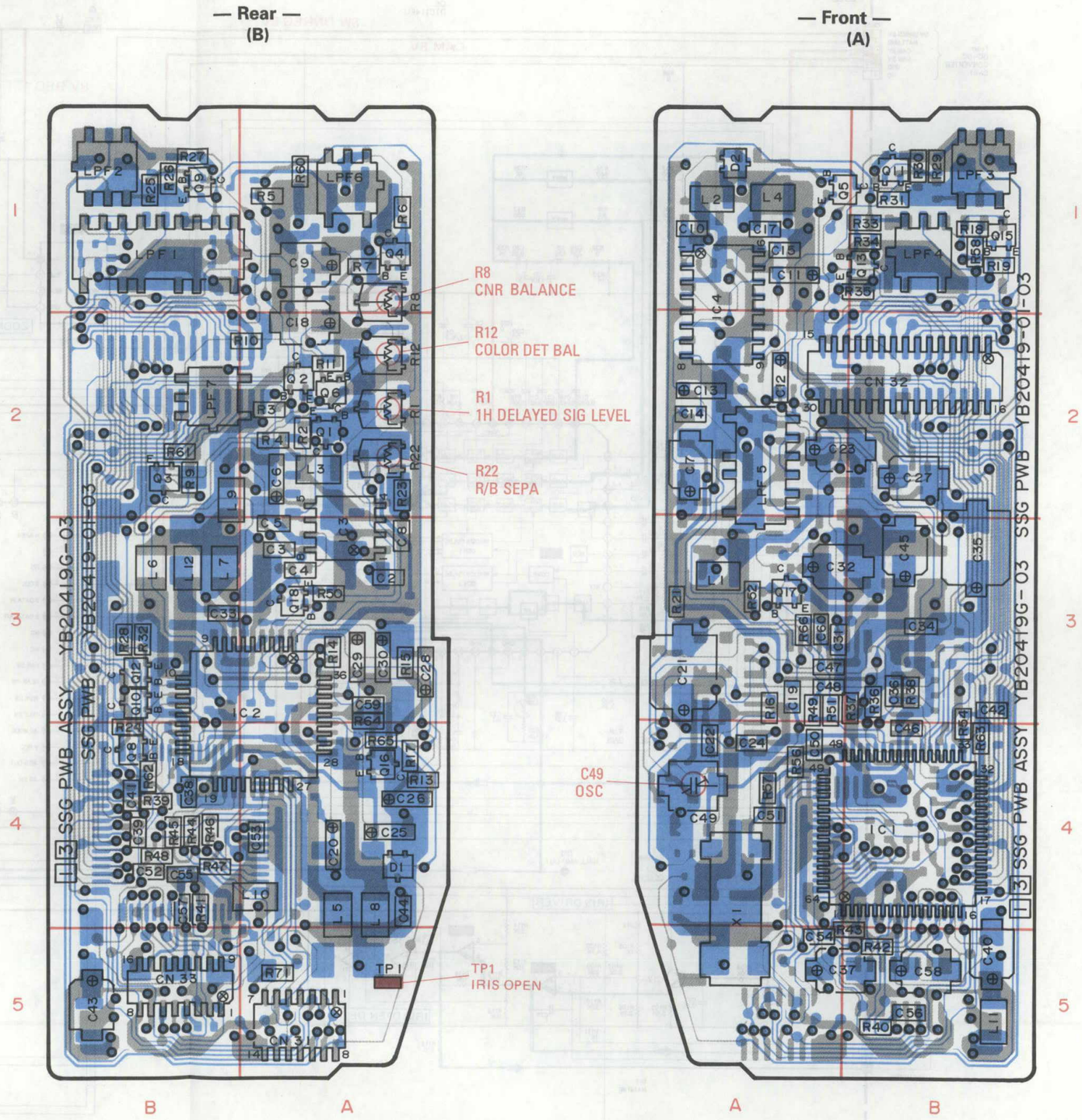
REF No.	LOCATION
CAPACITOR	
C24	A-4A
C25	B-4A
C26	B-4A
C27	A-2B
C28	B-3A
C29	B-3A
C30	B-3A
C31	A-3A
C32	A-3B
C33	B-3B
C34	A-3B
C35	A-3B
C36	A-3B
C37	A-5B
C38	B-4B
C39	B-4B
C40	A-5B
C41	B-4B
C42	A-3B
C43	B-5B
C44	B-4A
C45	A-3B
C46	A-4B
C47	A-3A
C48	A-3A
C49	A-4A
C50	A-4A
C51	A-4A
C52	B-4B
C53	B-4A
C54	A-5A
C55	B-4B
C56	A-5B
C57	B-4B
C58	A-5B
C59	B-3A
C60	A-3A

REF No.	LOCATION
LOW PASS FILTER	
LPF1	B-1B
LPF2	B-1B
LPF3	A-1B
LPF4	A-1B
LPF5	A-2A
LPF6	B-1A
LPF7	B-2B

REF No.	LOCATION
RESONATOR	
X1	A-4A

REF No.	LOCATION
CONNECTOR	
CN31	B-5A
CN32	A-2B
CN33	B-5B

REF No.	LOCATION
COIL	
L1	A-3A
L2	A-1A
L3	B-2A
L4	A-1A
L5	B-4A
L6	B-3B
L7	B-3B
L8	B-4A
L9	B-2B
L10	B-4A
L11	A-5B
L12	B-3B



Digitized by WWW.FREESERVICEMANUALS.INFO

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

5.18 AUTO FOCUS SCHEMATIC DIAGRAM

- Shaded (▒) parts are critical for safety. Replace only with specified part numbers.
- Voltage: Measured as the color bar pattern which lighted up brightly is shot in the Rehersal mode.
- Waveform: Measured as the gray scale or color bar pattern which light up brightly is shot in the rehersal mode.
- SIGNAL PATH
  - IRIS
  - HALL
  - FOCUS

1 5 AF

SW UNREG 6V

CAM 5V

8V REG

CAM 9V

ZOOM MOTOR DRIVER

IRIS DRIVER

IRIS OPEN DET

IC5 MM1036XF

Q1 2SB1132(QR)

IC7 M5236ML

IC1 MN12821(QR)

IC2 HA13489MP

Q2 DTA114EU

Q5 XP2501

Q6 DTC114EU

Q11 2SB1218(QR)

Q12 2SD1819(QR)

IC4 JCY0007-1

IC11 LM324DB

IC3 MN18888JFRS

Q3 XP5601

IC6 LM358DB

Free service manuals
Gratis schema's
Digitized by
www.freeservicemanuals.info

www.freeservicemanuals.info

3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

5.19 AF CIRCUIT BOARD

• Address of chip parts
A-1D
Address
A : Discrete parts side
B : Chip parts side

• Only chip parts

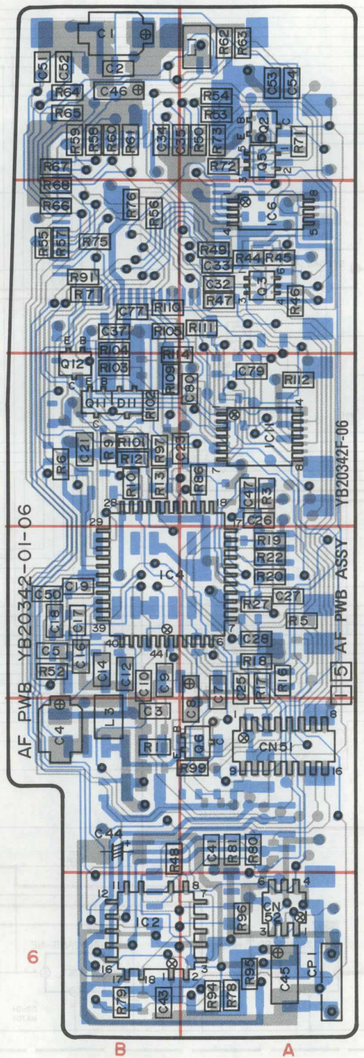
REF No.	LOCATION
IC	
IC1	A-2B
IC2	B-6B
IC3	A-2B
IC4	B-4B
IC5	A-6A
IC6	B-2A
IC7	A-6B
IC11	B-3A
TRANSISTOR	
Q1	A-6A
Q2	B-1A
Q3	B-2A
Q5	B-1A
Q6	B-5A
Q11	B-3B
Q12	B-3B
DIODE	
D11	B-3B
D12	A-3B
RESISTOR	
R1	B-5B
R3	B-3A
R5	B-4A
R6	B-3B
R7	B-2B
R8	A-3B
R9	B-3B
R10	B-3B
R11	A-3B
R12	B-3B
R13	B-3B
R15	A-3B
R16	B-4A
R17	B-4A
R18	B-4A
R19	B-4A
R20	B-4A
R21	A-4A
R22	B-4A
R24	A-3A
R27	B-4A
R28	A-3A
R29	A-4A
R30	A-3A
R31	A-4A
R32	A-5A
R33	A-4A
R35	A-5A
R36	A-4B
R37	A-4B
R39	A-5A
R40	A-4B
R41	A-4B
R43	A-4A
R44	B-2A
R45	B-2A
R46	B-2A

REF No.	LOCATION
RESISTOR	
R47	B-2A
R48	B-5B
R49	B-2A
R50	B-1A
R51	A-2A
R52	B-4B
R53	B-1A
R54	B-1A
R55	B-2B
R56	B-2B
R57	B-2B
R58	B-1B
R59	B-1B
R60	B-1B
R61	B-1B
R62	B-1A
R63	B-1A
R64	B-1B
R65	B-1B
R66	B-2B
R67	B-1B
R68	B-2B
R69	A-2B
R71	B-1A
R72	B-1A
R73	B-1A
R75	B-2B
R76	B-2B
R77	A-1A
R78	B-6A
R79	B-6B
R80	B-5A
R81	B-5A
R86	B-3A
R87	A-2A
R89	A-1A
R90	A-2A
R91	B-2B
R92	A-3B
R93	A-6B
R94	B-6A
R95	B-6A
R96	B-6A
R97	B-3B
R99	B-5A
R101	B-3B
R102	B-3B
R103	B-3B
R104	B-2B
R105	B-2B
R106	A-3B
R107	A-3B
R108	A-3B
R109	B-3B
R110	B-2B
R111	B-2A
R112	B-3A
R113	A-3A
R114	B-3B
R115	A-2A
R116	A-3A
R117	A-3A
R118	A-3A
R119	A-3A
R120	B-5A
R130	A-5A

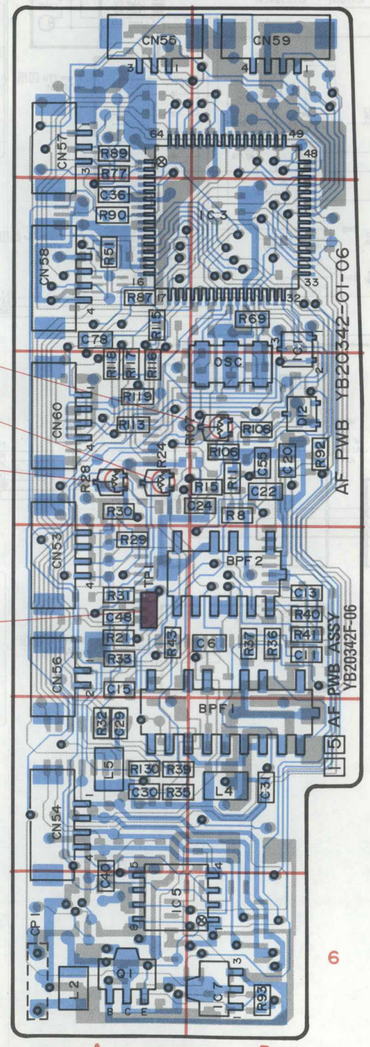
REF No.	LOCATION
CAPACITOR	
C1	B-1B
C2	B-1B
C3	B-5B
C4	B-5B
C5	B-4B
C6	A-4B
C7	B-4A
C8	B-4A
C9	B-4B
C10	B-4B
C11	A-4B
C12	B-4B
C13	A-4B
C14	B-4B
C15	A-4A
C16	B-4B
C17	B-4B
C18	B-4B
C19	B-4B
C20	A-3B
C21	B-3B
C22	A-3B
C23	B-3A
C24	A-3B
C25	B-4A
C26	B-3A
C27	B-4A
C28	B-4A
C29	A-5A
C30	A-5A
C31	A-5B
C32	B-2A
C33	B-2A
C34	B-1B
C35	B-1B
C36	A-2A
C37	B-2B
C40	A-6A
C41	B-5A
C43	B-6B
C44	B-5B
C45	B-6A
C46	B-1B
C47	B-3A
C48	A-4A
C50	B-4B
C51	B-1B
C52	B-1B
C53	B-1A
C54	B-1A
C55	A-3B
C77	B-2B
C78	A-2A
C79	B-3A
C80	B-3A
COIL	
L1	B-1A
L2	A-6A
L3	B-5B
L4	A-5B
L5	A-5A

REF No.	LOCATION
BAND PASS FILTER	
BPF1	A-5B
BPF2	A-4B
RESONATOR	
X1	A-3B
TEST PIN	
TP1	A-4A
CONNECTOR	
CN51	B-5A
CN52	B-6A
CN53	A-4A
CN54	A-5A
CN55	A-1A
CN56	A-4A
CN57	A-1A
CN58	A-2A
CN59	A-1B
CN60	A-3A

— Rear —
(B)



— Front —
(A)



R107
EE LEVEL

R24
OFF SET

R28
GAIN

TP1
HALL AMP OUT

Free service manuals
Gratis schema's
Digitized by
www.freeservicemanuals.info

Published in Heiloo, Holland.

www.freeservicemanuals.info

3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

5.20 CPU, REAR, JUNCTION & TALLY SCHEMATIC DIAGRAMS

● Shaded ( ) parts are critical for safety.
Replace only with specified part numbers.

●Voltage : Measured as the color bar pattern which lighted up brightly is shot in the Rehersal mode.

*** EXCHANGE PARTS LIST**

SYMBOL	EG	EK,EA,EG(S)
B1	1S2473	OPEN
B2	1S2473	OPEN

Published in Heiloo, Holland.

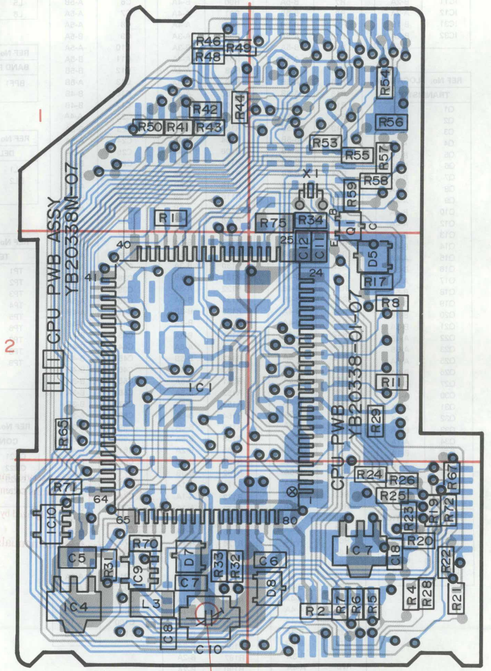
www.freeservicemanuals.info

3/13/16

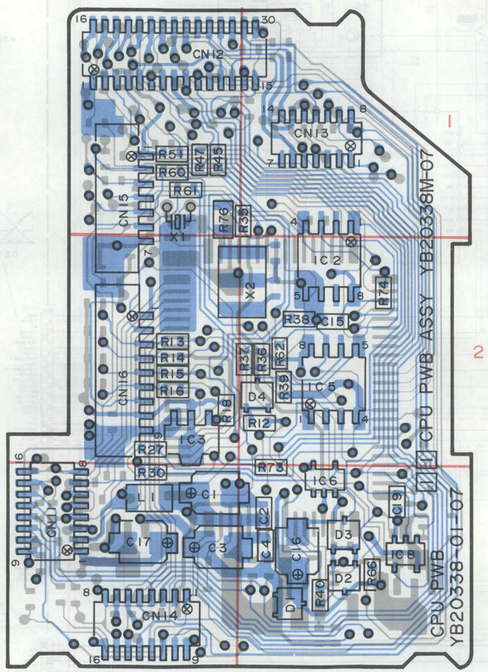
Digitized by WWW.FREESERVICEMANUALS.INFO

5.21 CPU, REAR, JUNCTION & TALLY CIRCUIT BOARDS

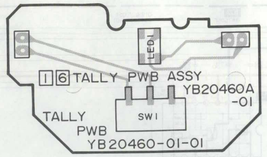
— Rear —
(B)



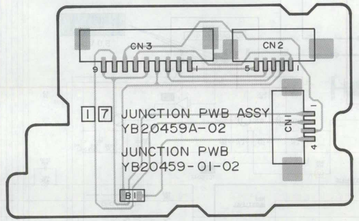
— Front —
(A)



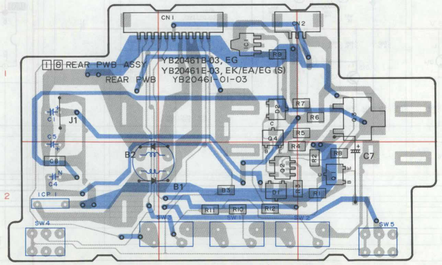
— TALLY —



— JUNCTION —



— REAR —



* EXCHANGE PARTS LIST

Symbol	EG	EK/EA /EG(S)
B1	○	x
B2	○	x

* Address of chip parts
A-1D
Address
A : Discrete parts side
B : Chip parts side

● Only chip parts

CPU BOARD ASSEMBLY <11>

REF No.	LOCATION
IC	
IC1	B-2B
IC2	A-2B
IC3	A-2A
IC4	B-3B
IC5	A-2B
IC6	A-3B
IC7	B-3A
IC8	A-3B
IC9	B-3B
IC10	B-3B

REF No.	LOCATION
TRANSISTOR	
Q1	B-1A

REF No.	LOCATION
DIODE	
D1	A-3B
D2	A-3B
D3	A-3B
D4	A-2B
D5	B-2A
D7	B-3B
D8	B-3A

REF No.	LOCATION
CAPACITOR	
C1	A-3A
C2	A-3B
C3	A-3A
C4	A-3B
C5	B-3B
C6	B-3A
C7	B-3B
C8	B-3B
C10	B-3B
C11	B-2A
C12	B-2A
C15	A-2B
C16	A-3B
C17	A-3A
C18	B-3A
C19	A-3B

REF No.	LOCATION
RESISTOR	
R1	B-1B
R2	B-3A
R4	B-3A
R5	B-3A
R6	B-3A
R7	B-3A
R8	B-2A
R11	B-2A
R12	A-2B
R13	A-2A
R14	A-2A
R15	A-2A
R16	A-2A
R17	B-2A
R18	A-2A
R19	B-3A
R20	B-3A
R21	B-3A
R22	B-3A
R23	B-3A
R24	B-3A
R25	B-3A
R26	B-3A
R27	A-2A
R28	B-3A
R29	B-2A
R30	A-3A
R31	B-3B
R32	B-3B
R33	B-3B
R34	B-1A
R35	A-1B
R36	A-2B
R37	A-2B
R38	A-2B
R39	A-2B
R40	A-3B
R41	B-1B
R42	B-1B
R43	B-1B
R44	B-1B
R45	A-1A
R46	B-1B
R47	A-1A
R48	B-1B
R49	B-1B
R50	B-1B
R51	A-1A
R53	B-1A
R54	B-1A
R55	B-1A
R56	B-1A
R57	B-1A
R58	B-1A
R59	B-1A
R60	A-1A
R61	A-1A
R62	A-2B
R65	B-2B
R66	A-3B
R67	B-3A

REF No.	LOCATION
RESISTOR	
R70	B-3B
R71	B-3B
R72	B-3A
R73	A-2B
R74	A-2B
R75	B-1A
R76	A-1A

REF No.	LOCATION
COIL	
L1	A-3A
L3	B-3B

REF No.	LOCATION
CRYSTAL	
X2	A-2A

REF No.	LOCATION
CONNECTOR	
CN11	A-3A
CN12	A-1A
CN13	A-1B
CN14	A-3A
CN15	A-1A
CN16	A-3A

REAR BOARD ASSEMBLY <18>

REF No.	LOCATION
IC	
IC1	1-B

REF No.	LOCATION
TRANSISTOR	
Q1	2-A
Q2	2-B
Q3	1-A
Q4	1-B

REF No.	LOCATION
DIODE	
D1	2-B
D2	1-B

REF No.	LOCATION
RESISTOR	
R1	2-A
R2	2-A
R3	1-A
R4	2-A
R5	1-A
R6	1-A
R7	1-A
R8	2-A
R9	1-B
R10	2-B
R11	2-B
R12	2-B

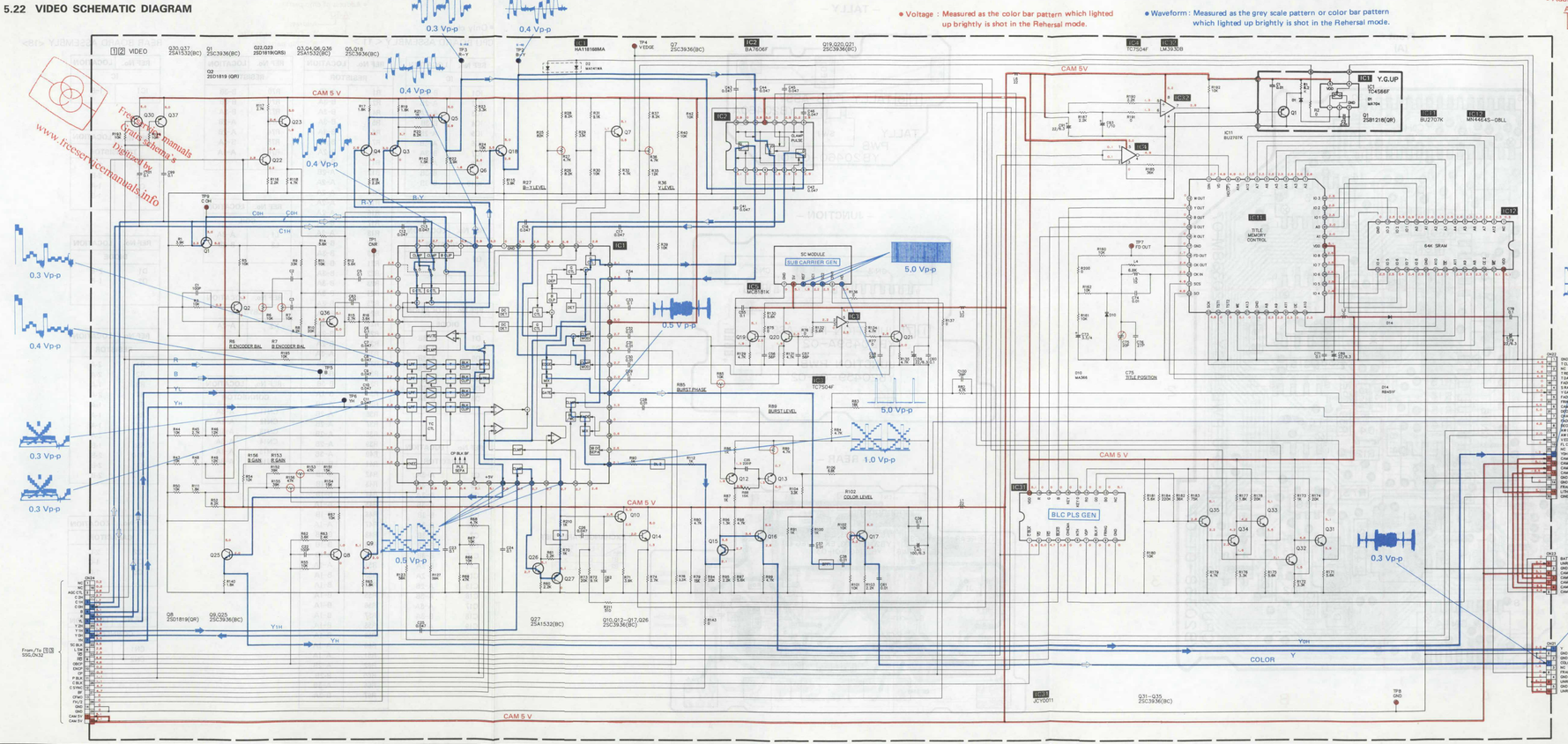
REF No.	LOCATION
CAPACITOR	
C2	2-C
C3	1-C
C6	1-C

REF No.	LOCATION
CONNECTOR	
CN1	1-B
CN2	1-B

Published in Heiloo, Holland.

www.freeservicemanuals.info

5.22 VIDEO SCHEMATIC DIAGRAM


• Voltage : Measured as the color bar pattern which lighted up brightly is shot in the Rehersal mode.
• Waveform : Measured as the grey scale pattern or color bar pattern which lighted up brightly is shot in the Rehersal mode.
1|2 VIDEO
CAM 5 V
0.3 Vp-p
0.4 Vp-p
0.5 Vp-p
1.0 Vp-p
5.0 Vp-p
R-Y
B-Y
Y/H
COLOR
SUB CARRIER GEN
BLC PLS GEN
TITLE MEMORY CONTROL
64K SRAM
Y.G.UP
From/To 1|1 OPU,CN13
From/To 1|2 DC-DC CONVERTER CH52
From/To 8|3 VTR,CN15
From/To 1|3 SSG,CN32

• Address of chip parts
A-1D
Address
A : Discrete parts side
B : Chip parts side

• SIGNAL PATH
Y
R, R-Y
B, B-Y
COLOR

• Only chip parts

REF No.	LOCATION
IC	
IC1	B-4A
IC2	A-4B
IC3	B-3A
IC4	B-3A
IC11	B-2A
IC12	A-2A
IC31	B-1B
IC32	B-2A

REF No.	LOCATION
TRANSISTOR	
Q1	A-5B
Q2	A-5A
Q3	B-5B
Q4	A-5B
Q5	B-5B
Q6	B-5B
Q7	B-4A
Q8	A-4A
Q9	A-4A
Q10	B-4A
Q12	A-4A
Q13	B-4A
Q14	B-4A
Q15	A-4A
Q16	B-3A
Q17	A-4A
Q18	B-5B
Q19	B-3A
Q20	B-3B
Q21	B-3A
Q22	A-4B
Q23	A-5B
Q25	A-5A
Q26	B-5A
Q27	B-5A
Q30	A-3B
Q31	A-1A
Q32	A-1A
Q33	B-1A
Q34	A-1A
Q35	B-1A
Q36	A-5B
Q37	A-3B

REF No.	LOCATION
DIODE	
D2	A-3B
D10	B-3B
D14	A-2B

REF No.	LOCATION
RESISTOR	
R1	A-5B
R3	A-5A
R5	A-5A
R6	B-5B
R7	B-5A
R8	B-5B
R9	B-5B
R10	A-5A
R11	B-5A
R12	A-5B
R14	A-5B
R15	A-5B
R16	A-5B
R17	A-5B
R18	A-5B
R19	B-5B
R21	B-5B
R22	B-4B
R23	B-5B
R24	B-5B
R25	B-4B
R26	B-4B
R27	B-4B
R28	B-4B
R29	A-3B
R30	A-3B
R31	A-3B
R32	B-4A
R35	B-4B
R36	B-4B
R37	B-4B
R39	B-4A
R40	B-4A
R42	B-4A
R44	B-5A
R45	B-5A
R46	B-5A
R47	B-5A
R48	B-5A
R49	B-5A
R50	B-5A
R51	B-5A
R52	B-5A
R54	B-5A
R55	A-4A
R57	A-4A
R60	B-5A
R61	B-4A
R62	A-4A
R63	A-4A
R65	A-4A
R66	A-4A
R67	A-4A
R68	A-4A
R69	B-5A
R70	B-4A
R71	B-4A
R72	A-4A
R73	A-4A
R74	B-4A
R75	B-3A
R76	B-3B
R77	B-3A
R78	A-4A
R79	B-4A
R80	A-4A
R82	A-1B
R83	A-2A
R84	B-4A
R85	B-4A
R86	A-4A
R87	A-4A
R88	A-3A
R89	B-4A
R90	B-4A
R91	A-4A
R94	A-4A
R95	A-3A
R96	B-3A
R97	A-4A
R98	A-4A
R99	B-3A
R100	A-4A
R101	A-4A
R102	B-4A
R103	A-4A
R104	B-4A
R106	B-4A
R111	B-5A
R112	A-5A
R115	B-5B
R116	A-5B
R117	A-5B
R118	A-5B
R123	B-5A
R127	B-5A
R129	B-3A
R130	B-3A
R131	B-3B
R132	A-3A
R134	B-3A
R135	B-3B
R136	B-3A
R137	B-3A
R140	A-5A
R142	B-5B
R143	A-4A
R151	B-5A
R152	B-5A
R153	B-5A
R154	B-5A
R155	B-5A
R156	B-5A
R160	B-2A
R161	B-3B
R162	B-3B
R171	A-1A
R172	A-1A
R173	A-1A
R174	A-1A
R175	A-1A
R176	A-1A
R177	B-1A
R178	B-1A
R179	A-1A
R180	B-1A
R181	B-1A
R182	B-1A
R183	B-1A
R184	B-1A
R185	B-2A
R187	B-2A
R190	B-2A
R191	B-2A
R192	B-2A
R195	A-5B
R200	B-3B
R210	B-4A
R211	A-4A

REF No.	LOCATION
CAPACITOR	
C1	A-5A
C2	B-5B
C3	B-5A
C5	A-5A
C6	A-5B
C7	A-5A
C8	A-5A
C9	B-5A
C10	A-5A
C11	B-5A
C12	B-5B
C13	A-5B
C16	B-4B
C17	B-4B
C22	A-4A
C23	B-5A
C24	A-5A
C25	A-5A
C26	B-4A
C28	A-4A
C29	A-4A
C30	B-4A
C31	A-4A
C32	A-4A
C33	A-4A
C34	A-4B
C35	A-4A
C37	A-4A
C38	A-4A
C39	A-5A
C40	A-5A
C41	A-4B
C42	B-4B
C43	B-4B
C44	B-4B
C45	B-4B
C46	B-4B
C55	B-3A
C56	B-3A
C57	B-3B
C58	B-3A
C59	A-3A
C60	B-3A
C61	A-4A
C62	B-4A
C71	B-2A
C73	B-2B
C74	B-3B
C75	B-3B
C76	B-3B
C78	A-2B
C79	A-2B
C83	A-5B
C89	A-3A
C91	A-1A
C92	A-1A
C93	B-1A
C99	A-3B
C100	A-1B
C101	A-3B

REF No.	LOCATION
COIL	
L1	A-5A
L2	B-3A
L3	B-3A
L4	B-3B
L5	B-3B
L6	B-1A

REF No.	LOCATION
BAND PASS FILTER	
BPF1	A-4A

REF No.	LOCATION
DELAY LINE	
DL1	B-4A
DL2	A-5A

REF No.	LOCATION
TEST PIN	
TP1	B-5B
TP2	B-4B
TP3	B-4B
TP4	B-4A
TP5	B-5A
TP6	B-5A
TP7	B-3B
TP8	B-1B
TP9	B-5B

REF No.	LOCATION
CONNECTOR	
CN21	B-1B
CN22	A-1B
CN23	A-1B
CN24	A-4B

Digitized by www.freeservicemanuals.info
Free service manuals Grais sarana's

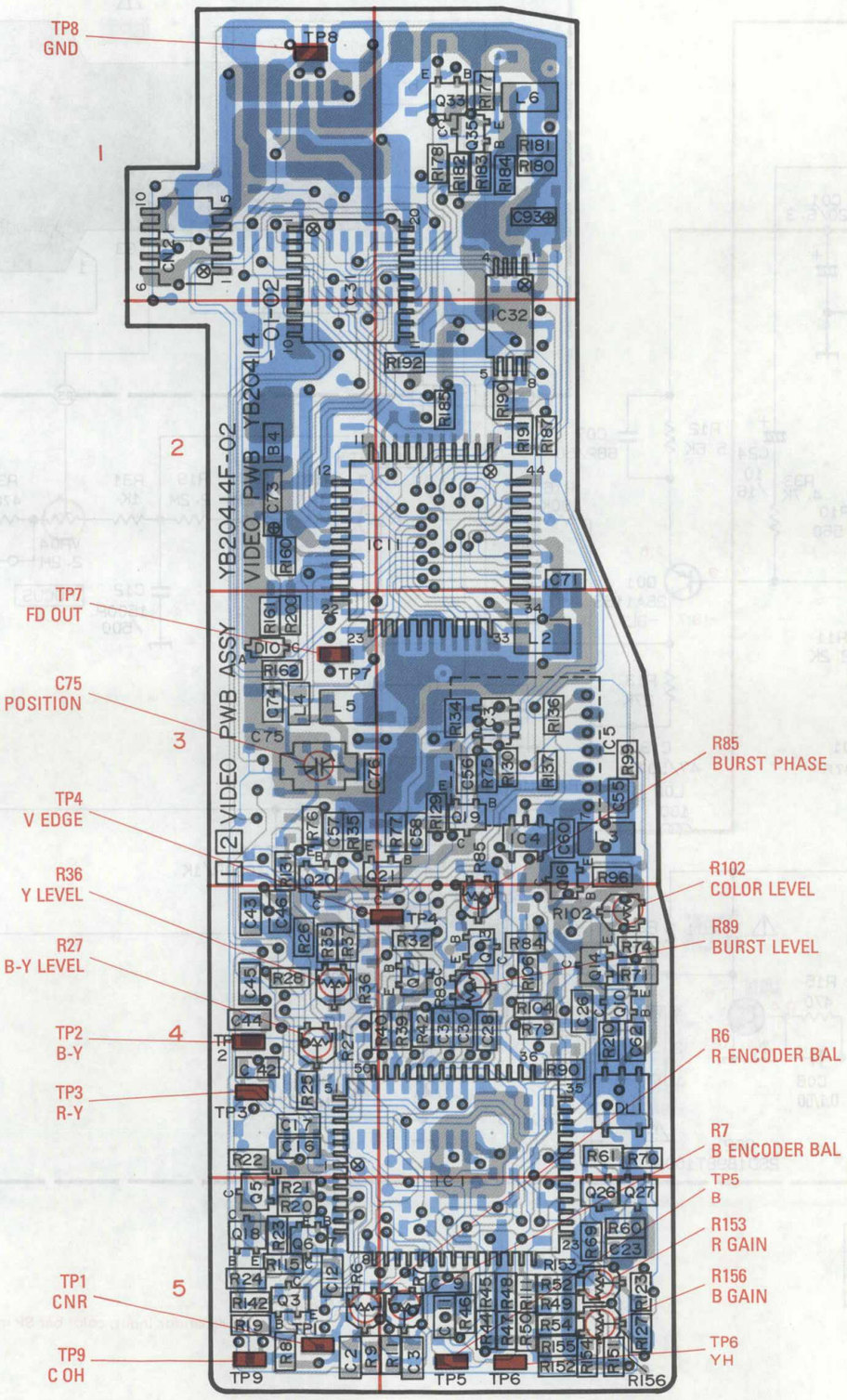
Published in Heiloo, Holland.

www.freeservicemanuals.info

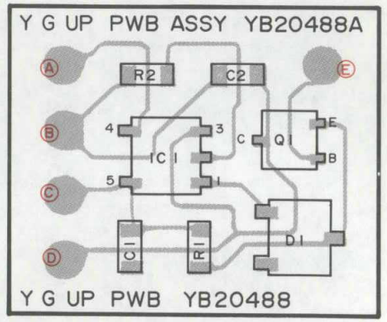
5.23 VIDEO CIRCUIT BOARD

— Rear —
(B)

— Front —
(A)



— Y G UP —

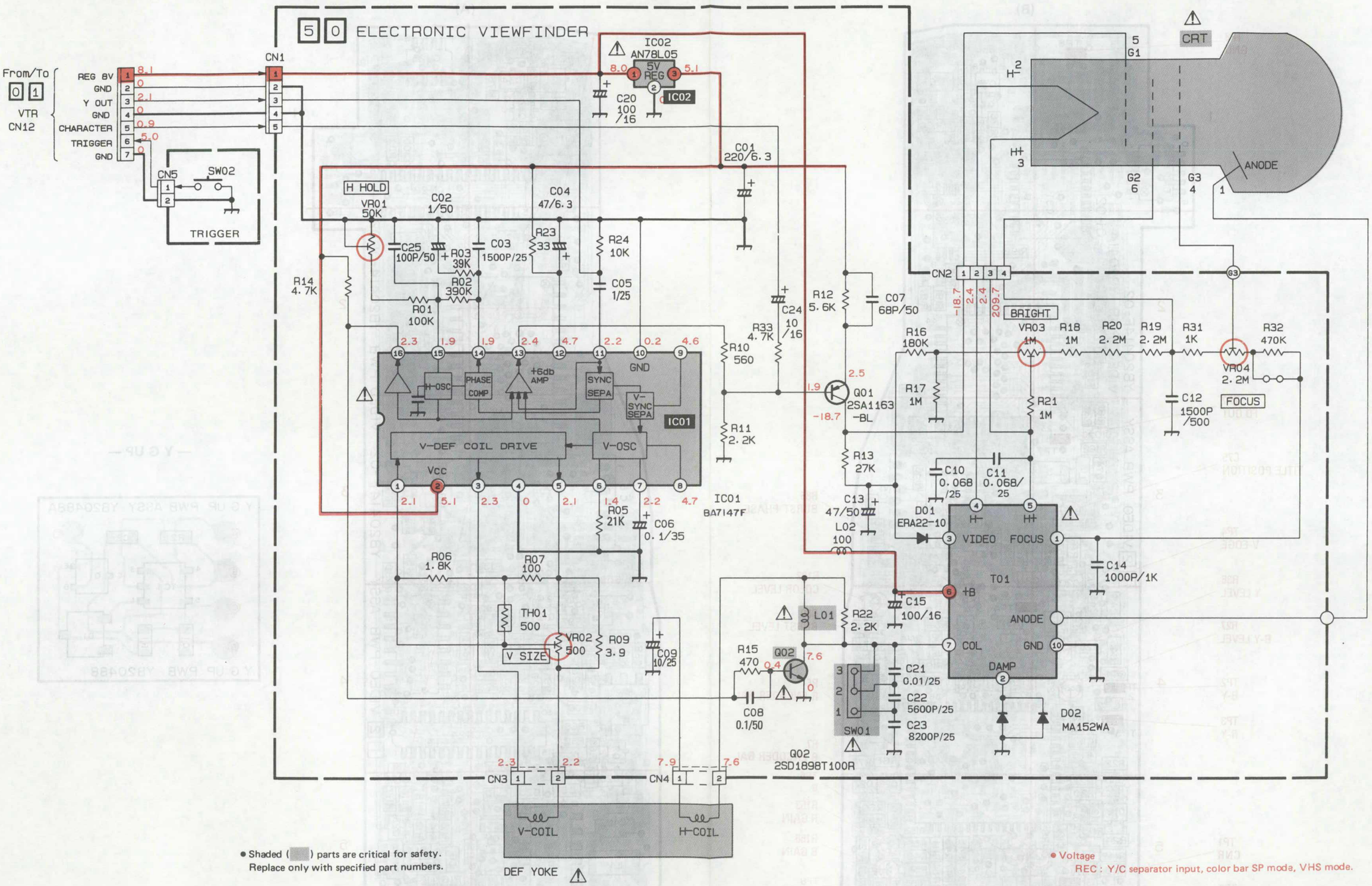


Digitized by WWW.FREESERVICEMANUALS.INFO

Published in Heiloo, Holland.

www.freeservicemanuals.info

5.24 ELECTRONIC VIEWFINDER SCHEMATIC DIAGRAM



● Shaded ( ) parts are critical for safety.
Replace only with specified part numbers.

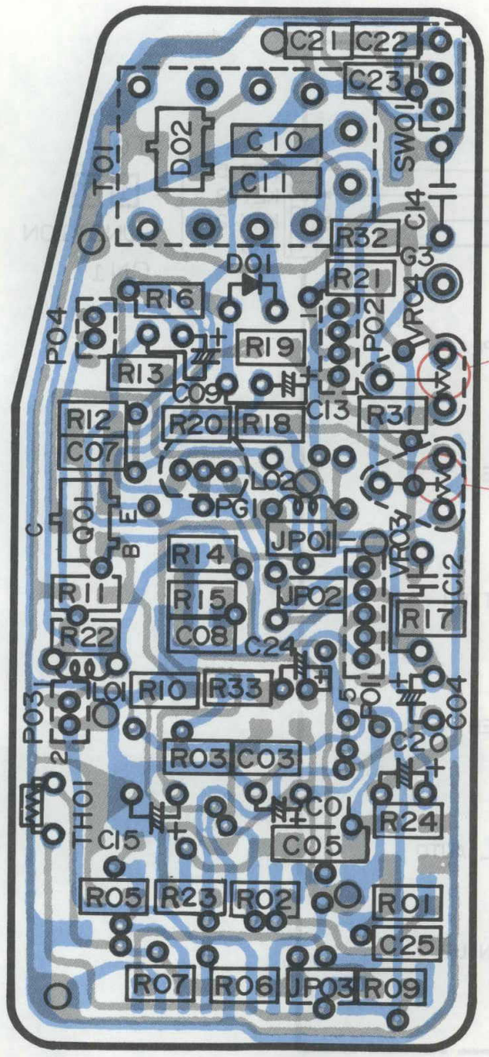
● Voltage
REC : Y/C separator input, color bar SP mode, VHS mode.

Published in Heiloo, Holland.
Digitized by WWW.FREESERVICEMANUALS.INFO

www.freeservicemanuals.info

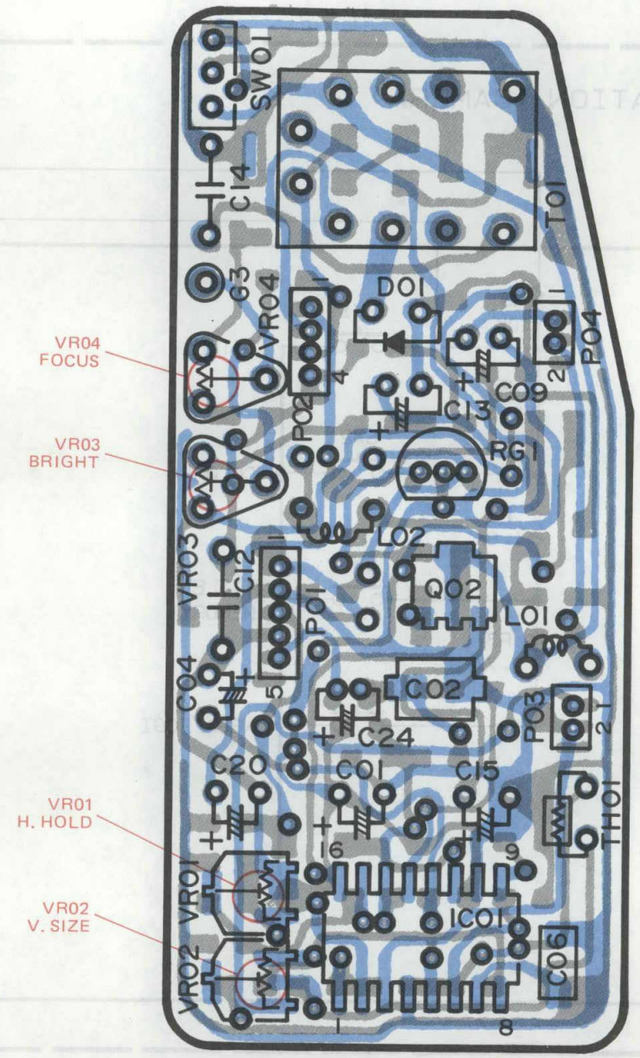
5.25 ELECTRONIC VIEWFINDER CIRCUIT BOARD

— Rear —
(B)



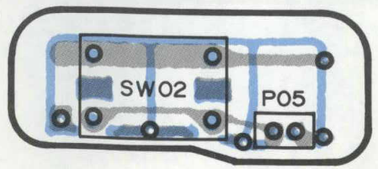
5 0 E. VF PWB ASSY YU30531-102

— Front —
(A)



5 0 E. VF PWB ASSY YU30531-102

— TRIGGER —



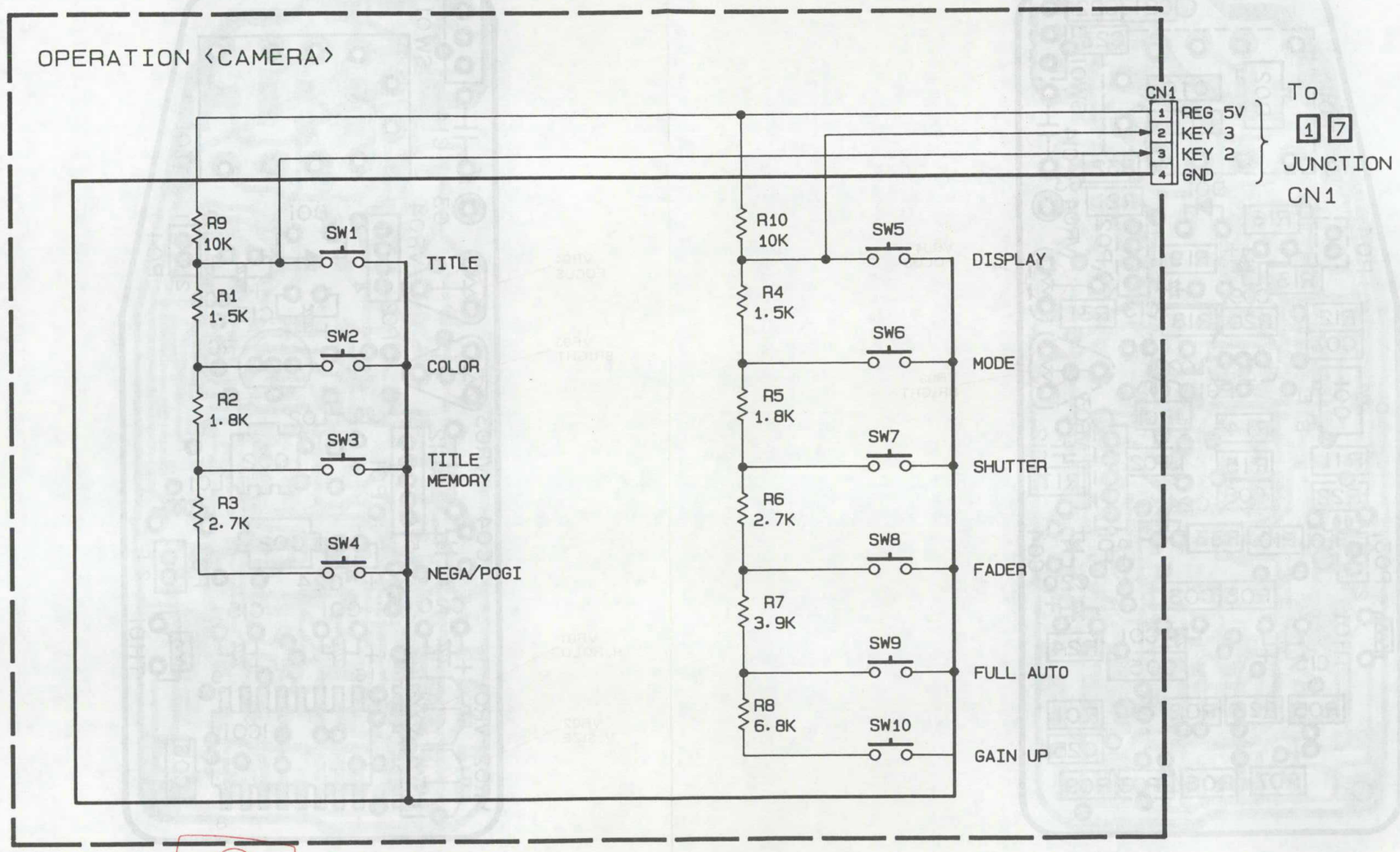
Digitized by WWW.FREESERVICEMANUALS.INFO

Published in Heiloo, Holland.

www.freeservicemanuals.info

5.26 OPERATION (CAMERA) SCHEMATIC DIAGRAM

NOTE: This schematic diagram is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.



Free service manuals
Gratis schema`s
Digitized by
www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

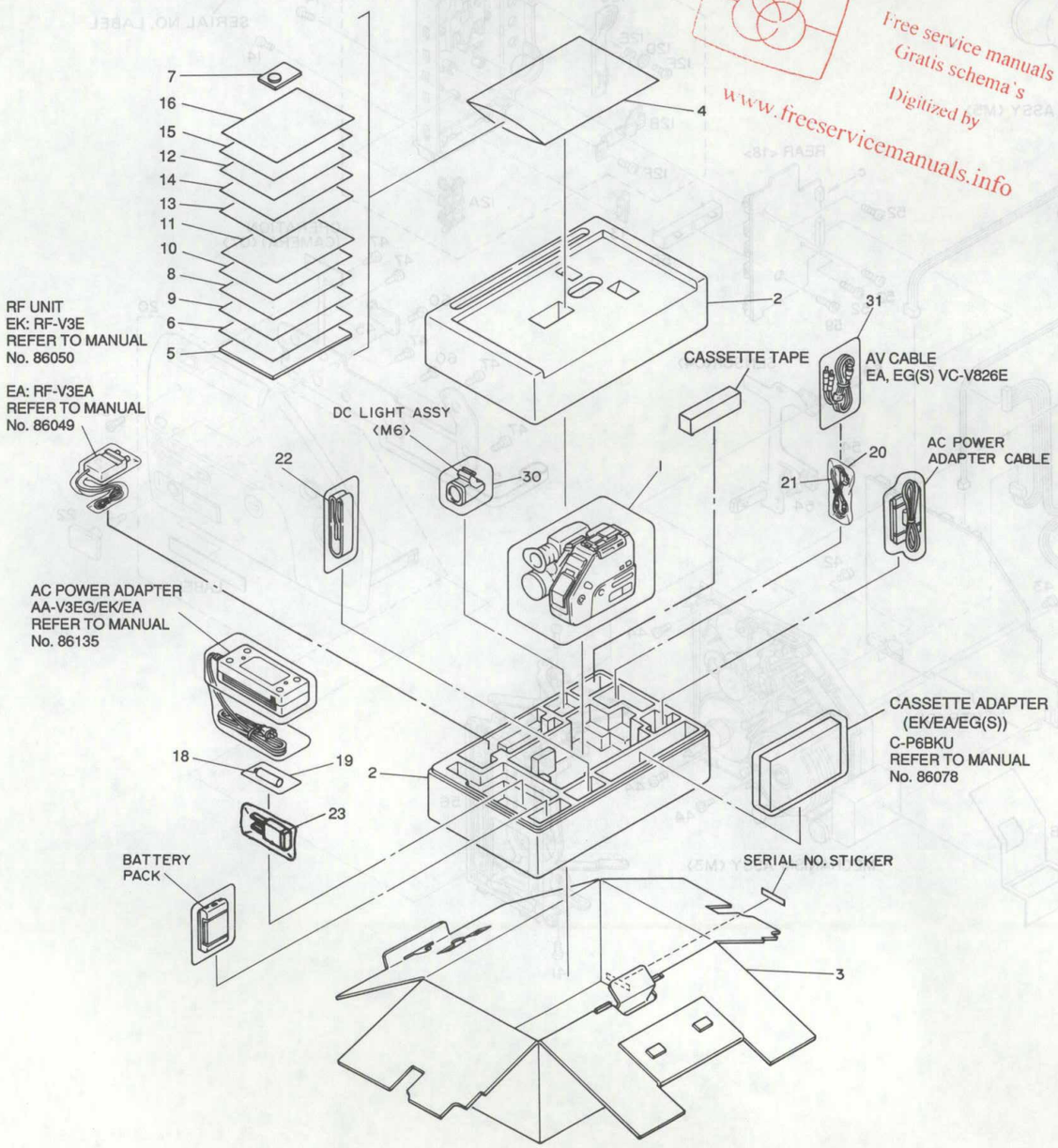
SECTION 6
MECHANICAL PARTS AND EXPLODED VIEWS

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

NOTE: <M > indicates mechanical symbol number.

6.1 PACKING ASSEMBLY <M1>



Free service manuals
Gratis schema's
Digitized by
www.freeservicemanuals.info

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION

PACKING ASSEMBLY <M1>

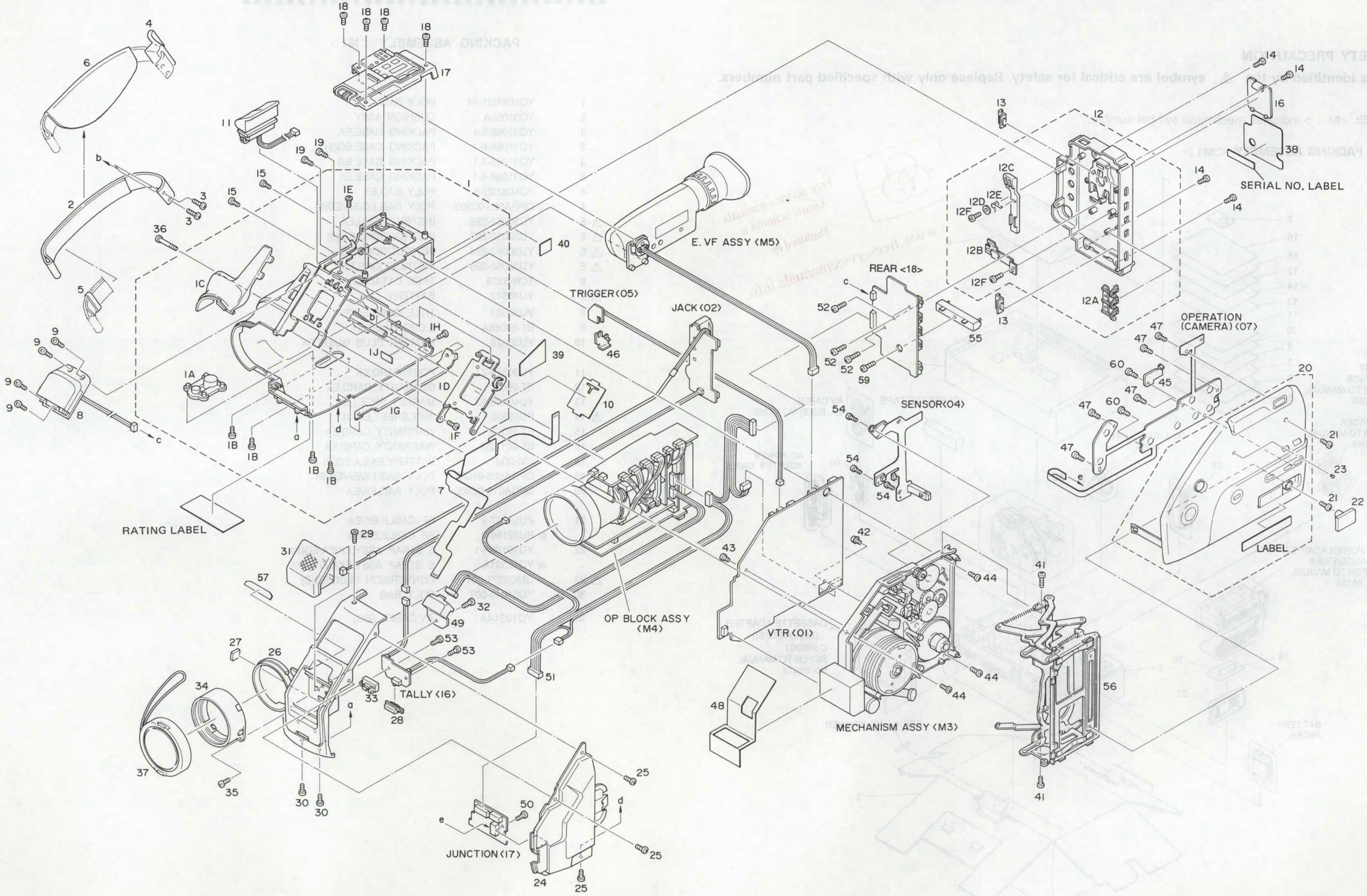
	1	YQM30021-24	POLY BAG
	2	YQ31065A	CUSHION ASSY
	3	YQ31066-5-1	PACKING CASE,EA
	3	YQ31066-6-1	PACKING CASE,EG(S)
	3	YQ31066-3-1	PACKING CASE,EG
	3	YQ31066-4-1	PACKING CASE,EK
	4	PQM30023-5	POLY BAG,EK
	4	QPGA025-03505	POLY BAG,EG/EA/EG(S)
⚠	5	YU30052-226	INSTRUCTIONS,EA
⚠	5	YU30052-227	INSTRUCTIONS,EG(S)
⚠	5	YU30052-224	INSTRUCTIONS,EG
⚠	5	YU30052-225	INSTRUCTIONS,EK
	6	TCN-3379	TAPE CATALOG
⚠	7	YU40547	BATTERY
	8	YU30584	TITLE CARD,EG/EK
	9	BT-20066A	E.DISTRI.LIST,EK
	10	YU30328	MEMBER CLUB GUIDE,EK
	11	YU30328-2	POST CARD,EK
	12	BT-20060	GUARANTY CARD,EK
	13	YU40406-38	MARKET SHEET,EK
⚠	14	PU59932	INST.SHEET,EG(S)
	15	BT-20122	WARRANTY CARD,EA
	16	BT-20122-1	WARRANTY CARD,EA
	18	UM-3DJ	BATTERY,EK/EA/EG(S)
	19	QPGA005-01005	POLY BAG,EK/EA/EG(S)
	20	QPGA010-02505	POLY BAG,EK/EA
	21	PU59167-3	RF CABLE,EK/EA
		or PU59168-3	RF CABLE,EK/EA
	22	YQ10188A-1	S STRAP ASSY,EK/EA/EG(S)
		or YQ10331A	S STRAP ASSY,EK/EA/EG(S)
⚠	23	QMC0271-001	CONVERSION PLUG,EG(S)
	30	YQ31040-007	POLY BAG
	31	YQ10314A	AV CABLE, (EG)

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

6.2 FINAL ASSEMBLY < M2 >



Published in Heiloo Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

FINAL ASSEMBLY <M2>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
⚠	1	YQ10300C-1	LOWER CASE ASSY
	1A	YQ30756-1-4	BASE
	1B	YQM30052-2	SCREW,X4
	1C	YQ20486	FINGER PAD
	1D	YQ20503-1-2	BKT(FRONT)
	1E	YQM30032-1-2	SPECIAL SCREW,M2X4
	1F	YQM30032-2-2	SPECIAL SCREW,M2X5
	1G	YQ30942-1-2	BKT(BASE)
	1H	SPSH2003M	SCREW
	1J	YQM30029-66	SPACER
	2	YQ30847-1-1	GRIP BELT
	3	YQM30032-42	SCREW,X2
	4	YQ30778-1-2	FINGER PAD
	5	YQ42087	RING
	6	YQ30950-3-2	GRIP PAD
	7	YU41883-3	OP SW FPC
	8	YQ30927B-4	LIGHT SHOE ASSY
	9	SPSH2050D	SCREW,X4
	10	YQ42660	SHEET
	11	YQ20466-1-3	ZOOM SWITCH
⚠	12	YQ20483C-2	REAR COVER ASSY
	12A	YQ30943	DATE BUTTON
	12B	YQ30767A-2	LOCK LEVER ASSY
	12C	YQ42251	LOCK KNOB
	12D	YU41718	WASHER
	12E	YQ41879	TORTION SPRING
	12F	YQM30032-40	SPECIAL SCREW,X2 M2X4
	13	YQ42252	ALARM KNOB,X2
	14	YQM30052-3	SCREW,X4 M2X5
	15	YQM30052-2	SCREW,X2 M2X5
⚠	16	YQ30772-6	CLOCK BATTERY COVER
⚠	17	YQ10292-3-3	OPERATION UNIT,EG
⚠	17	YQ10292-4-3	OPERATION UNIT,EK/EA/EG(S)
	18	YQM30052-2	SCREW,X4 M2X5
	19	YQM30052-2	SCREW,X2 M2X5
⚠	20	YQ10303C-3	CASSETTE COVER ASSY
	21	YQM30032-5-2	SPECIAL SCREW,X2 M2X5
	22	YQ42259-2	BUTTON(CLOSE)
	23	YQ40703-7	CAP
⚠	24	YQ30946A-2	UPPER COVER ASSY
	25	SPSH2050D	SCREW,X3
⚠	26	YQ10305-2-6	FRONT PANEL
	27	YQM30029-85	SPACER
	28	YQ42305-1-2	VOICE KNOB
	29	SPSH2003M	SPECIAL SCREW
	30	YQM30052-2	SCREW,X2 M2X5
	31	YQ20481	MICROPHONE
	32	YQM30052-3	SCREW,M2X5
	33	YQ42260	INDICATOR
	34	YQ30948-2	HOOD
	35	YQM30052-2	SCREW,M2X5
	36	YQM30032-45	SPECIAL SCREW,M2X18
	37	YQ42350A-1	HOOD CAP ASSY
⚠	38	YU30564-4	BATTERY BASE SHEET
	39	YQ42666	SHEET
	40	YQM30029-93	SPACER
	41	SPSH1725M	SCREW,X2
	42	YQ40691	SPECIAL SCREW,M1.9X4
	43	SPSH1725M	SCREW
	44	SPSF2005Z	SCREW,X3
	45	YQ42358-1-2	PWB HOLDER
	46	YQ41864-1-2	PWB HOLDER
	47	YQM30032-40	SPECIAL SCREW,X5 M2X4
	48	YQ30859-1-3	SHEET
	49	YQ31079A	WHITE BALANCE SENSOR ASSY
	50	YQM30032-40	SPECIAL SCREW,M2X4
	51	ML-Y00584A	CPU PWB WIRE
	52	YQM30032-2-2	SPECIAL SCREW,X3
	53	SPSF2005Z	SCREW,X2
	54	SPSH1725M	SCREW,X3
	55	YQ30894A	HOLDER ASSY
	56	YQ31039A-3	CASSETTE HOUSING ASSY
	57	YQ42661	SHEET
	59	YQM30022-2-2	SPECIAL SCREW
	60	YQM30032-4-2	SPECIAL SCREW,X2

Published in Heiloo, Holland.

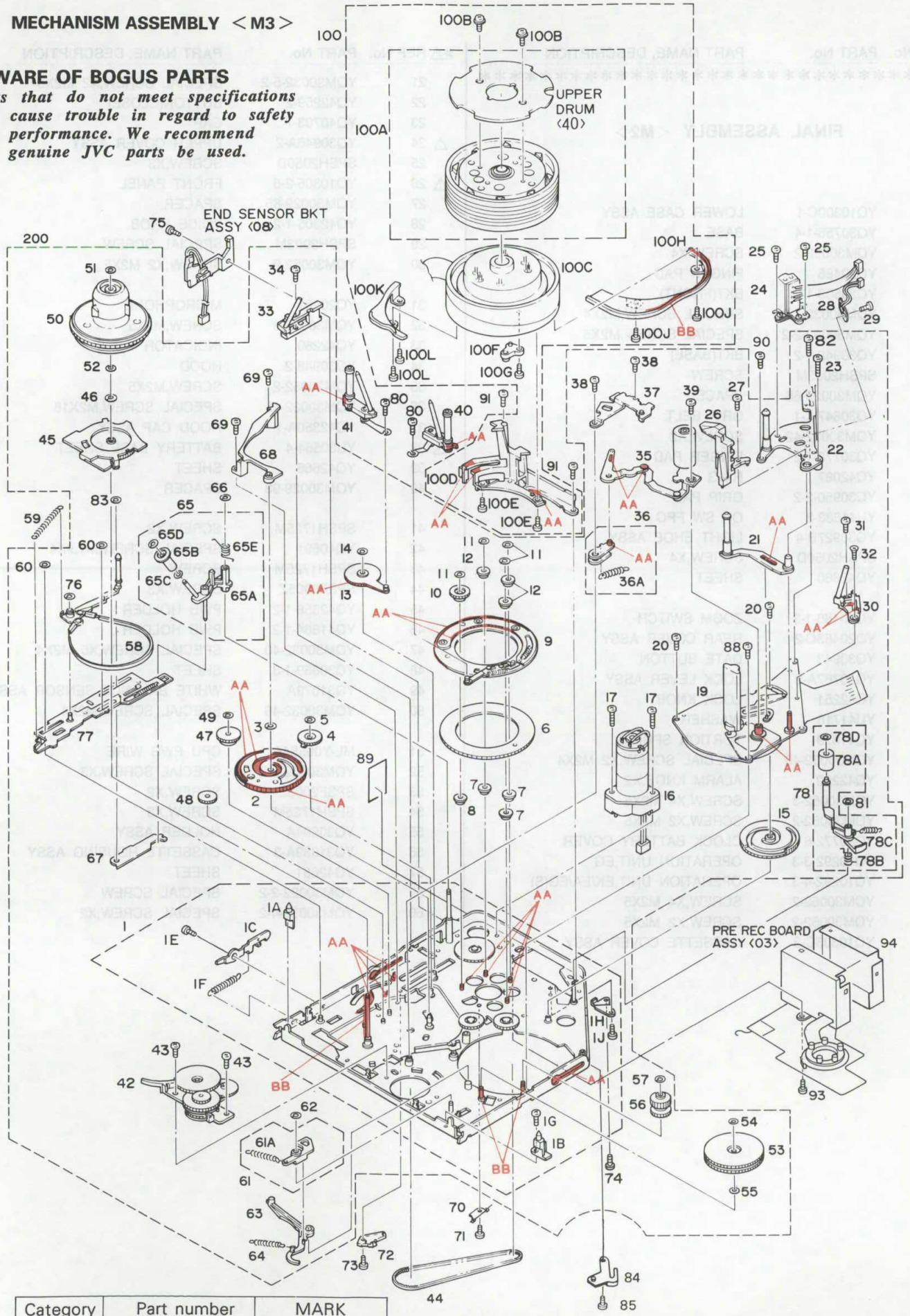
www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

6.3 MECHANISM ASSEMBLY <M3>

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.



Category	Part number	MARK
Grease	KANTO-G-31KAV	AA
Oil	COSMO-HV100	BB

NOTE: The section marked in AA and BB indicate lubrication and greasing areas.

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

MECHANISM ASSEMBLY <M3>

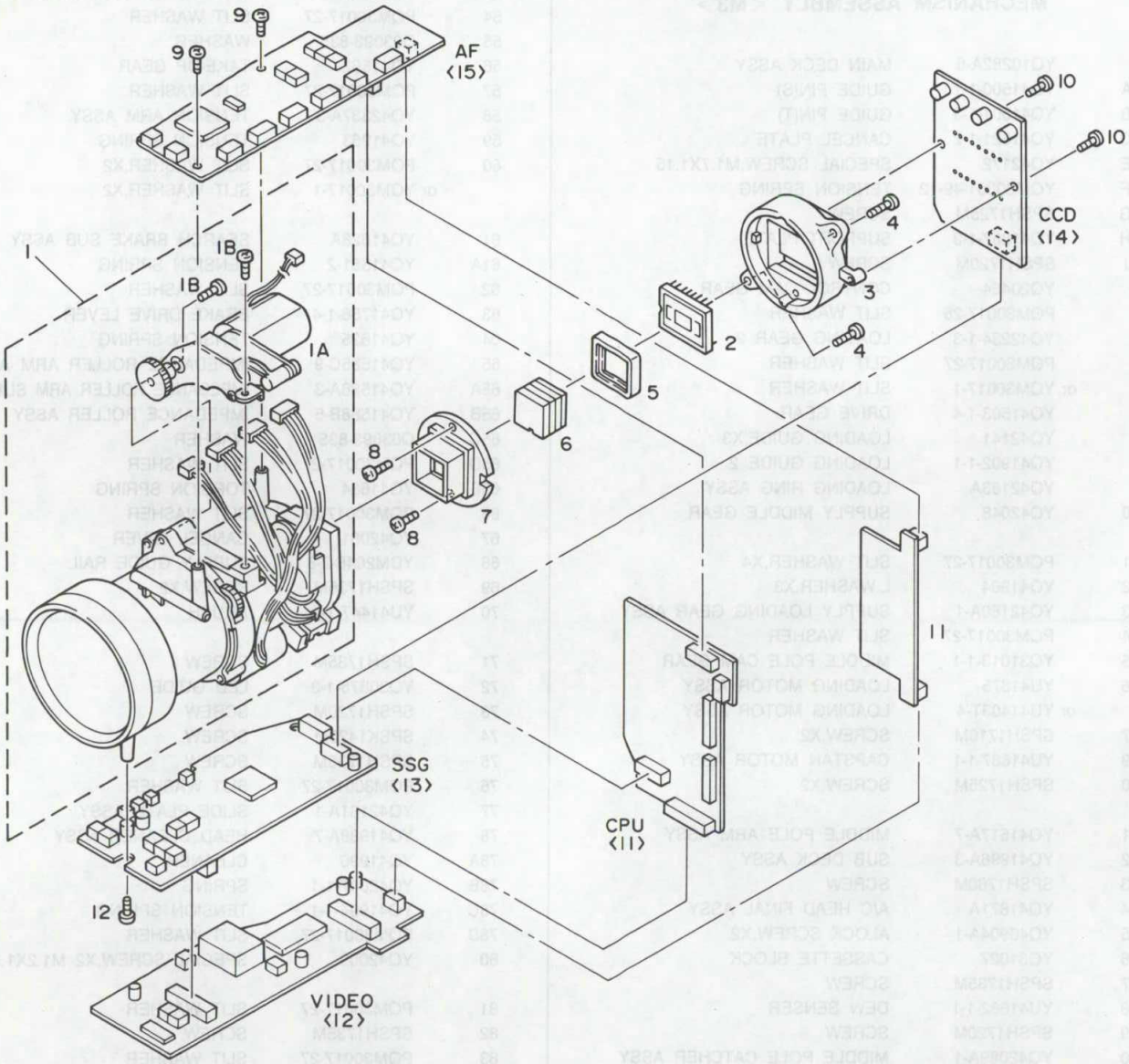
#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	1	YQ10282A-6	MAIN DECK ASSY
	1A	YQ41500-1-1	GUIDE PIN(S)
	1B	YQ41501-1-3	GUIDE PIN(T)
	1C	YQ41621-1-2	CANCEL PLATE
	1E	YQ42172	SPECIAL SCREW,M1.7X1.15
	1F	YQM30001-49-12	TENSION SPRING
	1G	SPSH1725M	SCREW
	1H	YQ41867-1-3	SUPPORT PLATE
	1J	SPSH1720M	SCREW
	2	YQ20464	CONTROL CAM GEAR
	3	PQM30017-25	SLIT WASHER
	4	YQ42234-1-3	LOADING GEAR 2
	5	PQM30017-27	SLIT WASHER
		or YQM30017-1	SLIT WASHER
	6	YQ41503-1-4	DRIVE GEAR
	7	YQ42141	LOADING GUIDE,X3
	8	YQ41902-1-1	LOADING GUIDE 2
	9	YQ42183A	LOADING RING ASSY
	10	YQ42048	SUPPLY MIDDLE GEAR
	11	PQM30017-27	SLIT WASHER,X4
	12	YQ41904	L.WASHER,X3
	13	YQ42180A-1	SUPPLY LOADING GEAR ASSY
	14	PQM30017-27	SLIT WASHER
	15	YQ31013-1-1	MIDDLE POLE CAM GEAR
⚠	16	YU41875	LOADING MOTOR ASSY
⚠		or YU41403T-4	LOADING MOTOR ASSY
	17	SPSH1710M	SCREW,X2
⚠	19	YU41887-1-1	CAPSTAN MOTOR ASSY
	20	SPSH1725M	SCREW,X2
	21	YQ41517A-7	MIDDLE POLE ARM ASSY
	22	YQ41996A-3	SUB DECK ASSY
	23	SPSH1760M	SCREW
	24	YQ41871A	A/C HEAD FINAL ASSY
	25	YQ40904A-1	ALOCK SCREW,X2
	26	YQ31027	CASSETTE BLOCK
	27	SPSH1735M	SCREW
	28	YU41682-1-1	DEW SENSER
	29	SPSH1720M	SCREW
	30	YQ42089A-1	MIDDLE POLE CATCHER ASSY
	31	SPSH1720M	SCREW
	32	SSSH1730M	SCREW
	33	YQ41535A-1	SUPPLY SLANT POLE ASSY
	34	SPSH1735M	SCREW
	35	YQ30906A-1	PINCH ROLLER ARM ASSY
	36	YQ42199A	SPRING PLATE ASSY
	36A	YQ41551-1	TENSION SPRING
	37	YQ42190A-1	GUIDE PLATE ASSY
	38	SPSH1425M	SCREW,X2
	39	YQM30032-21	SPECIAL SCREW,M1.7X3
	40	YU41911	TAKE UP POLE BASE ASSY
	41	YU41838-1-3	SUPPLY POLE BASE ASSY
	42	YU41406-1-7	CENTER GEAR ASSY
	43	SPSH1725M	SCREW,X2
	44	YQ41558	TIMING BELT
	45	YU41407-1-3	CAM SWITCH ASSY
	46	PQM30017-22	SLIT WASHER
	47	YQ41559-1-1	ENCODER GEAR(1)
	48	YQ41560	ENCODER GEAR(2)
	49	PQM30017-27	SLIT WASHER
		or YQM30017-1	SLIT WASHER
	50	YU41408-1-2	SUPPLY REEL DISK ASSY
	51	PQM30017-27	SLIT WASHER
	52	Q03093-835	WASHER
	53	YU41459-1-2	TAKE-UP CLUTCH ASSY
	54	PQM30017-27	SLIT WASHER
	55	Q03093-835	WASHER
	56	YQ41562	TAKE-UP GEAR
	57	PQM30017-27	SLIT WASHER
	58	YQ42337A-3	TENSION ARM ASSY
	59	YQ41963	TENSION SPRING
	60	PQM30017-27	SLIT WASHER,X2
		or YQM30017-1	SLIT WASHER,X2
	61	YQ41628A	SEARCH BRAKE SUB ASSY
	61A	YQ41551-2	TENSION SPRING
	62	PQM30017-27	SLIT WASHER
	63	YQ41756-1-4	BRAKE DRIVE LEVER
	64	YQ41625	TENSION SPRING
	65	YQ41585C-9	IMPEDANCE ROLLER ARM ASSY
	65A	YQ41586A-3	IMPEDANCE ROLLER ARM SUB ASSY
	65B	YQ41588B-5	IMPEDANCE ROLLER ASSY
	65C	Q03093-835	WASHER
	65D	PQM30017-27	SLIT WASHER
	65E	YQ41664	TORSION SPRING
	66	PQM30017-27	SLIT WASHER
	67	YQ42081	CANCEL LEVER
	68	YDM2046-2-8	SUPPLY GUIDE RAIL
	69	SPSH1735M	SCREW,X2
	70	YU41447-1-4	BRUSH
	71	SPSH1735M	SCREW
	72	YQ30875-1-3	LED GUIDE
	73	SPSH1720M	SCREW
	74	SPSK1420M	SCREW
	75	SPSH1735M	SCREW
	76	PQM30017-27	SLIT WASHER
	77	YQ42181A-1	SLIDE PLATE ASSY
	78	YQ41988A-7	HEAD CLEANER ASSY
	78A	YQ41990	CLEANER
	78B	YQ42047-1-1	SPRING
	78C	YQ41994-1-1	TENSION SPRING
	78D	PQM30017-27	SLIT WASHER
	80	YQ42009	SPECIAL SCREW,X2 M1.2X1.5
	81	PQM30017-27	SLIT WASHER
	82	SPSH1735M	SCREW
	83	PQM30017-27	SLIT WASHER
	84	YQ31035	WIRE HOLDER
	85	SPSH1725M	SCREW
	88	SPSH1730M	MINI SCREW
	89	YQM30029-78	SPACER
	90	SPSK1720M	MINI SCREW
	91	SPSK1735M	SPECIAL SCREW,X2
	93	SPSH1725M	SCREW
	94	YQ20389-1-1	SHIELD CASE U
	100	YDV2044A	DRUM FINAL ASSY,EK/EA/EG(S)
	100	YDV2045A	DRUM FINAL ASSY,EG
	100A	YDM2047A-3	UPPER DRUM ASSY,EK/EA/EG(S)
	100A	YDM2047C-3	UPPER DRUM ASSY,EG
	100B	YDM4031	SCREW,X2
	100C	YDM2049A-5	LOWER DRUM MOTOR ASSY
	100D	YDM2044-1-10	UV BASE
	100E	SPSK1734M	SCREW,X2
	100F	YDM4073	DRUM SPACER
	100G	SPSK1734M	SCREW
	100H	YDM2045-1-6	TAKE UP GUIDE RAIL
	100J	SPSH1725M	SCREW,X2
	100K	YDM2046-1-8	SUPPLY GUIDE RAIL
	100L	SPSH1725M	SCREW,X2
⚠	200	YMA0011A	MECHA(A) ASSY

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

6.4 OPTICAL BLOCK ASSEMBLY <M4>



#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
**********	**********	**********

OPTICAL BLOCK ASSEMBLY <M4>

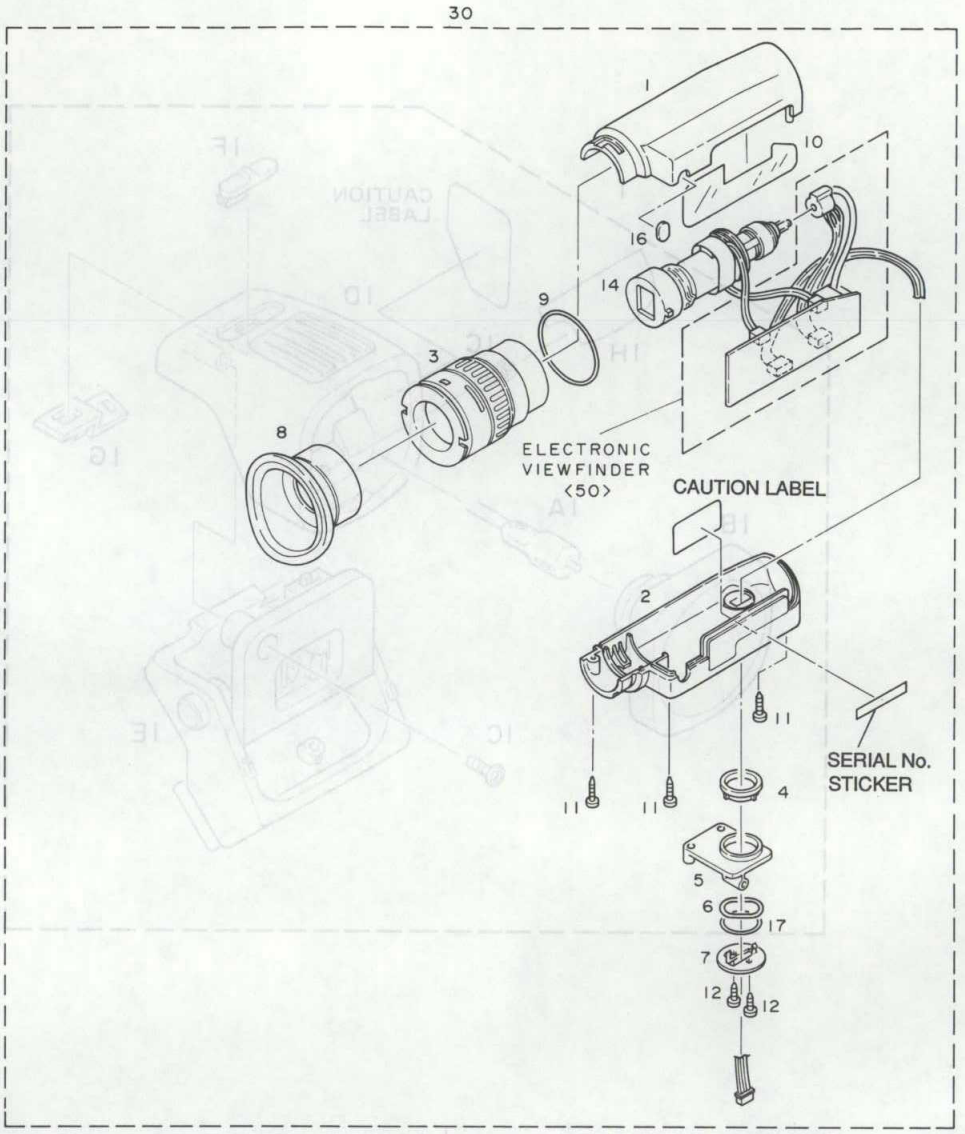
#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
⚠ 1	YU30579	OP BLOCK ASSY
1A	YU30398-001	ZOOM MOTOR ASSY
1B	YU30398-002	SCREW,X2
⚠ 2	MN3725HFE	CCD ASSY
3	YQ30744-1-3	IMAGER HOLDER
4	DPSP2009Z	SCREW,X2
5	YQ41838	SPACER RUBBER
6	YU41863	OPTICAL LPF
7	YQ31007	OPTICAL LPF HOLDER
8	SPSK2004F	MINI SCREW,X2
9	SPSN2005Z	SCREW,X2
10	SPSP2004Z	SCREW,X2
11	PEAS2071	DC-DC CONVERTER
	or YU41713	DC-DC CONVERTER
12	SPSN2005Z	SCREW

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

6.5 ELECTRONIC VIEWFINDER ASSEMBLY <M5>



#△ REF No.	PART No.	PART NAME, DESCRIPTION

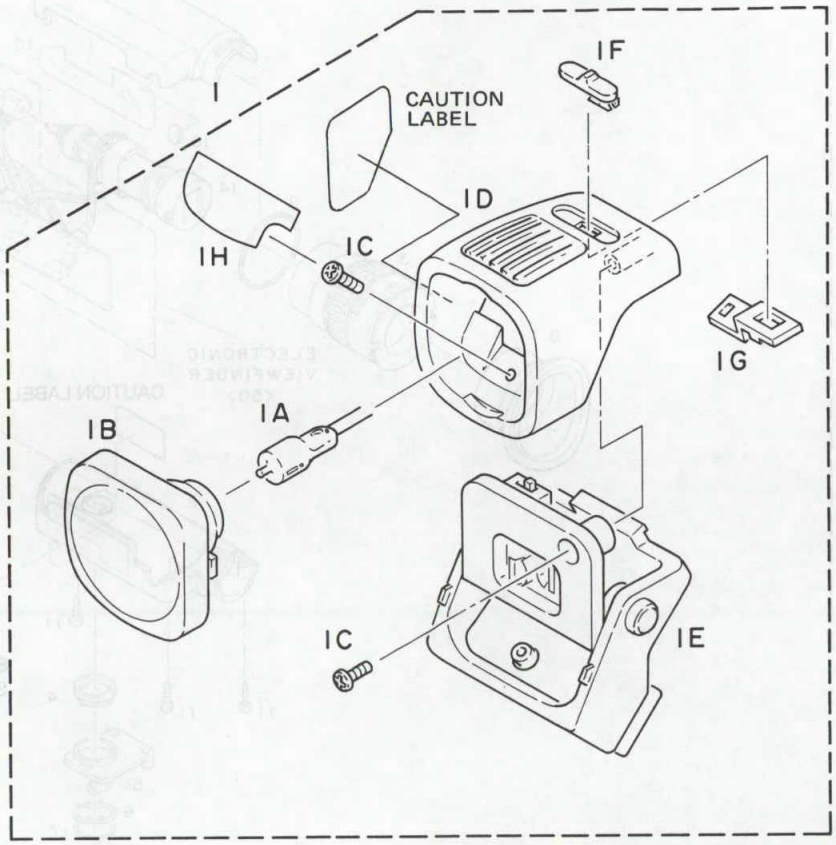
ELECTRONIC VIEWFINDER ASSEMBLY <M5>

1	YU30531-001	TOP CASE
2	YU30531-002	BOTTOM CASE
3	YU30531-003	LENS ASSY
4	YU30407-014	WASHER
5	YU30407-013	CAMERA PLATE
6	YU30407-016	SPRING
7	YU30407-017	CAP
8	YU30407-018	EYE CAP
9	YU30407-019	O RING
10	YU30531-004	SHIELD PLATE
11	YU30407-021	SCREW,X3
12	YU30407-022	SCREW,X2
14	YU30531-005	CRT ASSY
16	YU30531-007	TRIGGER BOTTON
17	YU30531-006	SPACER
△ 30	YU30531G	EVF ASSY

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

6.6 DC LIGHT ASSEMBLY (VL-V3E) <M6>



#⚠ REF No.	PART No.	PART NAME, DESCRIPTION

****

DC LIGHT ASSEMBLY <M6>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
⚠ 1	YQ31040G-4	DC LIGHT ASSY
1A	YQ31040-001	DC LIGHT BULB
1B	YQ31040-002	FRONT CASE ASSY
1C	YQ31040-003	SCREW,X2
1D	YQ31040-012	LAMP CASE
1E	YQ31040-004	SHOE BASE ASSY
1F	YQ31040-005	POWER SW KNOB
1G	YQ31040-006	KNOB SPACER
1H	YQ31040-008	REFLECTION SHEET

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

SECTION 7
ELECTRICAL PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

NOTES:

- [2 digits] indicates circuit board symbol number.
- "X " indicates quantity per set.

VTR BOARD ASSEMBLY <01>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
PWBA	YB10091A-01	VTR BOARD ASSY,EG
PWBA	YB10091B-01	VTR BOARD ASSY,EK/EA/EG(S)
IC31	BA7757BK	IC
IC32	LM324DB	IC
IC101	JCY0001B1	IC
IC102	JCY0002A1	IC
IC104	M56780VP	IC
IC105	BA7043FS	IC
IC251	VC5035	IC
IC252	LB1851M-J-X	IC
or	LB1851M-JJ-X	IC
IC301	M38063M6-115GP	IC
IC302	M54543AFP	IC
IC303	BU4584BF	IC
IC304	S-87050CF	IC
IC305	LM358DB	IC
IC401	BA7046F	IC
IC402	BU4053BF	IC
IC403	TC4S69F	IC
IC410	UPC1093T	IC
IC501	BA7288K	IC
or	XRA7288K	IC
IC502	TL8809F	IC
IC601	M51469HP	IC
Q1	DTC144EE	TRANSISTOR
Q16	2SA1577(QR)	TRANSISTOR
Q17	2SC4617(RS)	TRANSISTOR
Q18	2SC4617(R)	TRANSISTOR
Q19	2SC4617(R)	TRANSISTOR
Q20	DTA124EE	TRANSISTOR
Q21	DTC144EE	TRANSISTOR
Q31	DTC144EE	TRANSISTOR
Q34	2SA1577(QR)	TRANSISTOR
Q35	DTC144EE	TRANSISTOR
Q36	2SA1577(QR)	TRANSISTOR
Q37	DTC144EE	TRANSISTOR
Q38	2SC4617(RS)	TRANSISTOR

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
Q39	DTC144EE	TRANSISTOR
Q40	DTC144EE	TRANSISTOR
Q41	DTA124EE	TRANSISTOR
Q42	UMW1	TRANSISTOR
Q101	DTC144EE	TRANSISTOR
or	UN9213	TRANSISTOR
Q102	DTC114EE	TRANSISTOR
or	UN9214	TRANSISTOR
Q103	DTC144EE	TRANSISTOR
or	UN9213	TRANSISTOR
Q104	UMZ1	TRANSISTOR
or	XP4601	TRANSISTOR
Q106	UMZ1	TRANSISTOR
or	XP4601	TRANSISTOR
Q110	2SA1774(RS)	TRANSISTOR
Q111	2SC4617(RS)	TRANSISTOR
or	2SD2216(RS)	TRANSISTOR
Q112	DTA144EE	TRANSISTOR
or	UN9113	TRANSISTOR
Q113	DTA144EE	TRANSISTOR
or	UN9113	TRANSISTOR
Q114	2SC4617(RS)	TRANSISTOR
or	2SD2216(RS)	TRANSISTOR
Q116	2SC4617(RS)	TRANSISTOR
Q117	DTC144EE	TRANSISTOR
or	UN9213	TRANSISTOR
Q120	DTA144EE	TRANSISTOR
or	UN9113	TRANSISTOR
Q121	2SA1576(Q)	TRANSISTOR
Q122	DTC144EE	TRANSISTOR
or	UN9213	TRANSISTOR
Q123	UMG2	TRANSISTOR
Q124	UMG2	TRANSISTOR
Q301	DTA114EE	TRANSISTOR
Q302	2SA1774(QRS)	TRANSISTOR
Q303	2SA1774(QRS)	TRANSISTOR
Q304	2SC4617(QRS)	TRANSISTOR
Q305	DTC114EE	TRANSISTOR
Q306	DTC114EE	TRANSISTOR
Q401	2SA1774(QRS)	TRANSISTOR
Q501	2SC4617(QRS)	TRANSISTOR
Q502	2SC4617(QRS)	TRANSISTOR
Q504	2SA1774(QRS)	TRANSISTOR
Q505	2SC4617(QRS)	TRANSISTOR
Q506	2SC4617(QRS)	TRANSISTOR
Q511	2SC4617(QRS)	TRANSISTOR
Q512	DTC144EE	TRANSISTOR

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
Q513	DTC144EE	TRANSISTOR
Q514	2SA1774(QRS)	TRANSISTOR
Q515	2SC4617(QRS)	TRANSISTOR
Q516	2SA1774(QRS)	TRANSISTOR
Q517	DTC144EE	TRANSISTOR
Q521	2SA1577(QR)	TRANSISTOR
Q522	2SB624-T1BBV4	TRANSISTOR
Q523	2SA1577(QR)	TRANSISTOR
Q524	2SA1577(QR)	TRANSISTOR
Q526	DTA144EE	TRANSISTOR
Q527	2SA1774(RS)	TRANSISTOR
Q531	DTC144EE	TRANSISTOR,EK/EA/EG(S)
Q532	DTC144EE	TRANSISTOR,EK/EA/EG(S)
Q533	DTC144EE	TRANSISTOR,EK/EA/EG(S)
Q537	DTC144EE	TRANSISTOR,EK/EA/EG(S)
Q538	DTC144EE	TRANSISTOR
Q601	DTC144EE	TRANSISTOR
Q602	DTC144EE	TRANSISTOR
Q603	DTA144EE	TRANSISTOR
Q604	DTC144EE	TRANSISTOR
Q607	DTC144EE	TRANSISTOR,EG
Q608	DTC144EE	TRANSISTOR
Q609	2SC4617(QRS)	TRANSISTOR,EG
Q610	DTC144EE	TRANSISTOR,EK/EA/EG(S)
Q612	DTC144EE	TRANSISTOR
Q613	DTC144EE	TRANSISTOR,EK/EA/EG(S)
Q691	2SC4617(QRS)	TRANSISTOR
D1	DAN222	DIODE
D3	DA221	DIODE
D16	DAN222	DIODE
D102	RB451F	DIODE
D103	DAN222	DIODE
	or MA132WK	DIODE
D104	MA141WA	DIODE
D105	DAN222	DIODE
D106	DTZ6.8	ZENER DIODE
	or DTZ7.5	ZENER DIODE
D107	DTZ6.8	ZENER DIODE
	or DTZ7.5	ZENER DIODE
D108	DAN222	DIODE
D251	DAN222	DIODE
	or MA132WK	DIODE
D252	DAN222	DIODE
	or MA132WK	DIODE
D301	DAN222	DIODE
D302	RB451F	DIODE
D303	DAN222	DIODE
D304	RD6.8M(B1)	ZENER DIODE
D305	RD6.8M(B1)	ZENER DIODE
D306	RD6.8M(B1)	ZENER DIODE
D307	MA8120	DIODE

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
D502	DAN222	DIODE
D504	DAN222	DIODE
D505	DAN222	DIODE
D506	DAN222	DIODE
D510	DA221	DIODE
D513	DAN222	DIODE
D517	DAN222	DIODE,EK/EA/EG(S)
D602	DAN222	DIODE,EK/EA/EG(S)
D603	DA221	DIODE
R2	NRSA63J-102N	RESISTOR 1KΩ,1/16W
R5	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
R16	NRSA63J-103N	RESISTOR 10KΩ,1/16W
R17	NRSA63J-562N	RESISTOR 5.6KΩ,1/16W
R18	NRSA63J-473N	RESISTOR 47KΩ,1/16W
R19	NRSA63J-473N	RESISTOR 47KΩ,1/16W
R20	NRSA63K-5R6N	RESISTOR 5.6Ω,1/16W
R21	NRSA63K-5R6N	RESISTOR 5.6Ω,1/16W
R22	NRSA63J-102N	RESISTOR 1KΩ,1/16W
R23	NRSA63J-153N	RESISTOR 15KΩ,1/16W
R33	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
R35	NRSA63J-123N	RESISTOR 12KΩ,1/16W
R37	NRSA63J-105N	RESISTOR 1MΩ,1/16W
R38	NRSA63J-333N	RESISTOR 33KΩ,1/16W
R39	NRSA63J-103N	RESISTOR 10KΩ,1/16W
R40	NRSA63J-223N	RESISTOR 22KΩ,1/16W
R41	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
R42	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
R43	NRSA63J-102N	RESISTOR 1KΩ,1/16W
R44	NRSA63J-121N	RESISTOR 120Ω,1/16W
R45	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
R46	NRSA63J-273N	RESISTOR 27KΩ,1/16W
R48	NRSA63J-471N	RESISTOR,EK/EA/EG(S) 470Ω,1/16W
R49	NRSA63J-100N	RESISTOR 10Ω,1/16W
R50	NRSA63J-470N	RESISTOR 47Ω,1/16W
R51	NRSA63J-223N	RESISTOR 22KΩ,1/16W
R52	NRSA63J-121N	RESISTOR 120Ω,1/16W
R53	NRSA63J-124N	RESISTOR 120KΩ,1/16W
R54	NRSA63J-392N	RESISTOR 3.9KΩ,1/16W
R55	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
R56	NRSA63J-681N	RESISTOR 680Ω,1/16W
R57	NRSA63J-102N	RESISTOR 1KΩ,1/16W
R58	NRSA63J-181N	RESISTOR 180Ω,1/16W
R59	NRSA63J-133N	RESISTOR 13KΩ,1/16W
R60	NVP1201-103N	V RESISTOR,AUDIO PB LEVEL 10KΩ,1/2W
R61	NRSA63J-0R0N	RESISTOR 0Ω,1/16W
R64	NRSA63J-123N	RESISTOR 12KΩ,1/16W
R65	NRSA63J-123N	RESISTOR 12KΩ,1/16W
R66	NRSA63J-820N	RESISTOR 82Ω,1/16W
R67	NRSA63J-820N	RESISTOR 82Ω,1/16W
R68	NRSA63J-820N	RESISTOR 82Ω,1/16W
R69	NRSA63J-331N	RESISTOR 330Ω,1/16W
R70	NRSA63J-472N	RESISTOR 4.7KΩ,1/16W

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R71	NRVA63D-513N	RESISTOR	51KΩ,1/16W
R72	NRVA63D-513N	RESISTOR	51KΩ,1/16W
R73	NRVA63D-243N	RESISTOR	24KΩ,1/16W
R74	NRVA63D-104N	RESISTOR	100KΩ,1/16W
R75	NRVA63D-104N	RESISTOR	100KΩ,1/16W
R76	NRSA63J-331N	RESISTOR	330Ω,1/16W
R77	NRVA63D-513N	RESISTOR	51KΩ,1/16W
R78	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R82	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R83	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R84	NRSA63J-223N	RESISTOR	22KΩ,1/16W
R85	NRSA63K-2R2N	RESISTOR	2.2Ω,1/16W
R86	NVP1201-473N	V RESISTOR,BIAS LEVEL	47KΩ,1/2W
R87	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R88	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R89	NRSA63J-562N	RESISTOR	5.6KΩ,1/16W
R90	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
R91	NRSA63J-123N	RESISTOR	12KΩ,1/16W
R92	NRSA63J-224N	RESISTOR	220KΩ,1/16W
R93	NRSA63J-562N	RESISTOR	5.6KΩ,1/16W
R94	NRSA63J-682N	RESISTOR	6.8KΩ,1/16W
R101	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R103	NVP1201-474N	V RESISTOR,PB SW POINT	470KΩ,1/2W
R104	QRSA08J-124YN	RESISTOR	120KΩ,1/10W
R107	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R108	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R112	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R114	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R115	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R116	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R117	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R120	NRVA62D-103N	RESISTOR	10KΩ,1/16W
R121	NRVA62D-123N	RESISTOR	12KΩ,1/16W
R122	NRVA62D-222N	RESISTOR	2.2KΩ,1/16W
R123	NRVA62D-153N	RESISTOR	15KΩ,1/16W
R124	NRVA62D-122N	RESISTOR	1.2KΩ,1/16W
R125	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R126	NRSA63J-223N	RESISTOR	22KΩ,1/16W
R127	NRSA63J-683N	RESISTOR	68KΩ,1/16W
R128	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R129	NRSA63J-334N	RESISTOR	330KΩ,1/16W
R130	NRSA63J-105N	RESISTOR	1MΩ,1/16W
R131	NRSA63J-473N	RESISTOR	47KΩ,1/16W
R132	NRSA63J-473N	RESISTOR	47KΩ,1/16W
R133	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R135	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R136	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R137	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R138	NRSA63J-681N	RESISTOR	680Ω,1/16W
R139	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R140	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R141	NRSA63J-823N	RESISTOR	82KΩ,1/16W
R142	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R143	NRSA63J-334N	RESISTOR	330KΩ,1/16W
R144	NRSA63J-103N	RESISTOR	10KΩ,1/16W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R145	NRSA63J-105N	RESISTOR	1MΩ,1/16W
R146	NRSA63J-105N	RESISTOR	1MΩ,1/16W
R147	NRSA63J-154N	RESISTOR	150KΩ,1/16W
R148	NRSA63J-154N	RESISTOR	150KΩ,1/16W
R149	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R151	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R152	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R153	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R154	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R155	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R156	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R160	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R161	NRSA63J-683N	RESISTOR	68KΩ,1/16W
R162	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R163	NRSA63J-332N	RESISTOR	3.3KΩ,1/16W
R164	NRSA63J-474N	RESISTOR	470KΩ,1/16W
R165	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R166	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R170	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R172	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R173	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R174	NRSA63J-274N	RESISTOR	270KΩ,1/16W
R175	NRSA63J-684N	RESISTOR	680KΩ,1/16W
R176	NRSA63J-392N	RESISTOR	3.9KΩ,1/16W
R177	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R179	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R180	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R181	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R182	NRSA63J-273N	RESISTOR	27KΩ,1/16W
R183	NRSA63J-331N	RESISTOR	330Ω,1/16W
R185	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
R186	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R188	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R189	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R190	NRSA63J-333N	RESISTOR	33KΩ,1/16W
R191	NRSA63J-333N	RESISTOR	33KΩ,1/16W
R194	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R196	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R198	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R199	NRSA63J-473N	RESISTOR	47KΩ,1/16W
R200	NRSA63J-123N	RESISTOR	12KΩ,1/16W
R212	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R213	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R214	NRSA63J-273N	RESISTOR	27KΩ,1/16W
R215	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R216	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R217	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R221	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R231	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R232	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
R233	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
R234	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
R235	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
R236	NRSA63J-820N	RESISTOR	82Ω,1/16W

Free service manuals Gratis schema's Digitized by www.freeservicemanuals.info

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R251	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R252	NRSA63J-154N	RESISTOR	150KΩ,1/16W
R253	NRSA63J-153N	RESISTOR	15KΩ,1/16W
R254	NRSA63J-333N	RESISTOR	33KΩ,1/16W
R255	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R257	NRSA63J-151N	RESISTOR	150Ω,1/16W
R258	NRSA63J-473N	RESISTOR	47KΩ,1/16W
R261	NRSA63K-2R2N	RESISTOR	2.2Ω,1/16W
R262	NRSA63K-2R2N	RESISTOR	2.2Ω,1/16W
R263	NRSA63K-2R2N	RESISTOR	2.2Ω,1/16W
R264	YU41353-R68N	RESISTOR	
R266	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R267	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R268	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R269	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R276	NRSA63J-333N	RESISTOR	33KΩ,1/16W
R277	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R278	NRSA63J-681N	RESISTOR	680Ω,1/16W
R279	NRSA63K-2R2N	RESISTOR	2.2Ω,1/16W
R280	NRSA63K-2R2N	RESISTOR	2.2Ω,1/16W
R281	NRSA63K-2R2N	RESISTOR	2.2Ω,1/16W
R282	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R283	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R284	NRSA63J-184N	RESISTOR	180KΩ,1/16W
R285	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R301	NRSA63J-333N	RESISTOR	33KΩ,1/16W
R302	NRSA63J-105N	RESISTOR	1MΩ,1/16W
R303	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R304	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R305	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R306	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R307	NRSA63J-333N	RESISTOR	33KΩ,1/16W
R309	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R310	NRSA63J-751N	RESISTOR	750Ω,1/16W
R311	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R312	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R313	NRSA63J-101N	RESISTOR	100Ω,1/16W
R314	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R315	NRVA63D-363N	RESISTOR	36KΩ,1/16W
R316	NRVA63D-303N	RESISTOR	30KΩ,1/16W
R317	NRVA63D-683N	RESISTOR	68KΩ,1/16W
R318	NRSA63J-103N	RESISTOR,EG	10KΩ,1/16W
R319	NRSA63J-103N	RESISTOR,EK/EA/EG(S)	10KΩ,1/16W
R320	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R321	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R322	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R323	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R324	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R325	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
R326	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
R327	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R328	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R329	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R330	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R331	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R332	NRSA63J-223N	RESISTOR	22KΩ,1/16W
R333	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R334	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R335	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R336	NRSA63J-223N	RESISTOR	22KΩ,1/16W
R337	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R339	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R340	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R341	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R342	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R343	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R344	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R345	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R346	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R347	NRSA63J-474N	RESISTOR	470KΩ,1/16W
R348	NRSA63J-473N	RESISTOR	47KΩ,1/16W
R349	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R350	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R351	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R352	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R353	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R354	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R355	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R356	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R357	NRSA63J-223N	RESISTOR	22KΩ,1/16W
R358	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R359	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R360	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R361	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R362	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R363	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R364	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R365	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R366	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R367	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R368	NRSA63J-223N	RESISTOR	22KΩ,1/16W
R369	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R370	NRSA63J-223N	RESISTOR	22KΩ,1/16W
R371	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R372	NRSA63J-223N	RESISTOR	22KΩ,1/16W
R373	NRSA63J-273N	RESISTOR	27KΩ,1/16W
R374	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R375	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R376	NRSA63J-223N	RESISTOR	22KΩ,1/16W
R377	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R378	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R379	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R380	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R381	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R382	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R383	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R384	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R390	NRSA63J-224N	RESISTOR	220KΩ,1/16W
R391	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R392	NRSA63J-223N	RESISTOR	22KΩ,1/16W
R393	NRSA63J-124N	RESISTOR	120KΩ,1/16W

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R394	NRSA63J-105N	RESISTOR	1MΩ,1/16W
	R395	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
	R401	NRSA63J-333N	RESISTOR	33KΩ,1/16W
	R402	NRSA63J-273N	RESISTOR	27KΩ,1/16W
	R403	NRSA63J-474N	RESISTOR	470KΩ,1/16W
	R404	NRVA63D-134N	RESISTOR	130KΩ,1/16W
	R405	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
	R406	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
	R407	NRSA63J-183N	RESISTOR	18KΩ,1/16W
	R408	NRSA63J-474N	RESISTOR	470KΩ,1/16W
	R409	NRSA63J-302N	RESISTOR	3KΩ,1/16W
	R411	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R412	NRVA63D-103N	RESISTOR	10KΩ,1/16W
	R413	NRVA63D-103N	RESISTOR	10KΩ,1/16W
	R501	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
	R502	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
	R503	NRSA63J-821N	RESISTOR	820Ω,1/16W
	R504	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R505	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
	R506	NRSA63J-271N	RESISTOR	270Ω,1/16W
	R507	NRSA63J-122N	RESISTOR	1.2KΩ,1/16W
	R508	NRSA63J-681N	RESISTOR	680Ω,1/16W
	R509	NRSA63J-331N	RESISTOR	330Ω,1/16W
	R510	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R513	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R514	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
	R515	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
	R516	NRSA63J-391N	RESISTOR	390Ω,1/16W
	R517	NRSA63J-821N	RESISTOR	820Ω,1/16W
	R518	NRSA63J-391N	RESISTOR	390Ω,1/16W
	R519	NRSA63J-333N	RESISTOR	33KΩ,1/16W
	R520	NRSA63J-153N	RESISTOR	15KΩ,1/16W
	R521	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R522	NRSA63J-561N	RESISTOR	560Ω,1/16W
	R523	NRSA63J-561N	RESISTOR	560Ω,1/16W
	R524	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
	R528	NRSA63J-101N	RESISTOR	100Ω,1/16W
	R532	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R533	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R536	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
	R537	NRSA63J-471N	RESISTOR	470Ω,1/16W
	R538	NRSA63J-333N	RESISTOR	33KΩ,1/16W
	R539	NRSA63J-153N	RESISTOR	15KΩ,1/16W
	R540	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R542	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
	R543	NRSA63J-471N	RESISTOR	470Ω,1/16W
	R544	NRSA63J-203N	RESISTOR	20KΩ,1/16W
	R545	NRSA63J-203N	RESISTOR	20KΩ,1/16W
	R546	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R547	NRSA63J-152N	RESISTOR	1.5KΩ,1/16W
	R548	NRSA63J-102N	RESISTOR,EG	1KΩ,1/16W
	R548	NRSA63J-152N	RESISTOR,EK/EA/EG(S)	1.5KΩ,1/16W
	R550	NRSA63J-123N	RESISTOR	12KΩ,1/16W
	R551	NRSA63J-273N	RESISTOR	27KΩ,1/16W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R552	NRSA63J-333N	RESISTOR	33KΩ,1/16W
	R553	NRSA63J-273N	RESISTOR	27KΩ,1/16W
	R554	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R555	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
	R557	NRSA63J-563N	RESISTOR	56KΩ,1/16W
	R558	NRSA63J-152N	RESISTOR	1.5KΩ,1/16W
	R559	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R560	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R561	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
	R562	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
	R563	NRSA63J-104N	RESISTOR	100KΩ,1/16W
	R564	NRSA63J-561N	RESISTOR	560Ω,1/16W
	R565	NRSA63J-221N	RESISTOR	220Ω,1/16W
	R566	NRSA63J-824N	RESISTOR	820KΩ,1/16W
	R567	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
	R568	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R570	NRSA63J-562N	RESISTOR,EK/EA/EG(S)	5.6KΩ,1/16W
	R572	NRSA63J-331N	RESISTOR	330Ω,1/16W
	R574	NRSA63J-271N	RESISTOR	270Ω,1/16W
	R576	NRSA63J-561N	RESISTOR,EK/EA/EG(S)	560Ω,1/16W
	R577	NRSA63J-102N	RESISTOR,EK/EA/EG(S)	1KΩ,1/16W
	R578	NRSA63J-182N	RESISTOR,EK/EA/EG(S)	1.8KΩ,1/16W
	R586	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R587	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R588	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R589	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R591	NRSA63J-152N	RESISTOR	1.5KΩ,1/16W
	R592	NRSA63J-332N	RESISTOR	3.3KΩ,1/16W
	R593	NRSA63J-152N	RESISTOR	1.5KΩ,1/16W
	R594	NRSA63J-332N	RESISTOR	3.3KΩ,1/16W
	R595	NRSA63J-332N	RESISTOR	3.3KΩ,1/16W
	R596	NRSA63J-332N	RESISTOR	3.3KΩ,1/16W
	R598	NRSA63J-333N	RESISTOR	33KΩ,1/16W
	R599	NRSA63J-152N	RESISTOR	1.5KΩ,1/16W
	R601	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R602	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R603	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R604	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R605	NRSA63J-473N	RESISTOR	47KΩ,1/16W
	R606	NRSA63J-392N	RESISTOR	3.9KΩ,1/16W
	R607	NRSA63J-223N	RESISTOR	22KΩ,1/16W
	R608	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R609	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R610	NRSA63J-333N	RESISTOR	33KΩ,1/16W
	R611	NRSA63J-333N	RESISTOR	33KΩ,1/16W
	R612	NRSA63J-223N	RESISTOR	22KΩ,1/16W
	R613	NRSA63J-821N	RESISTOR	820Ω,1/16W
	R615	NRSA63J-392N	RESISTOR	3.9KΩ,1/16W
	R616	NRSA63J-153N	RESISTOR	15KΩ,1/16W
	R618	NRSA63J-392N	RESISTOR	3.9KΩ,1/16W
	R619	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
	R620	NRSA63J-563N	RESISTOR	56KΩ,1/16W
	R621	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R622	NRSA63J-103N	RESISTOR,EK/EA/EG(S)	10KΩ,1/16W
	R623	NRSA63J-103N	RESISTOR	10KΩ,1/16W

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R624	NRSA63J-103N	RESISTOR,EG	10KΩ,1/16W
R625	NRSA63J-122N	RESISTOR	1.2KΩ,1/16W
R626	NRSA63J-471N	RESISTOR	470Ω,1/16W
R627	NRSA63J-104N	RESISTOR,EK/EA/EG(S)	100KΩ,1/16W
R628	NRSA63J-104N	RESISTOR,EG	100KΩ,1/16W
R629	NRSA63J-123N	RESISTOR,EG	12KΩ,1/16W
R630	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R631	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R632	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R633	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R634	NRSA63J-562N	RESISTOR	5.6KΩ,1/16W
R635	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R636	NRSA63J-103N	RESISTOR,EK/EA/EG(S)	10KΩ,1/16W
R637	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R639	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R640	NRSA63J-332N	RESISTOR	3.3KΩ,1/16W
R641	QRSA08J-682YN	RESISTOR,EK/EA/EG(S)	6.8KΩ,1/10W
R651	NVP1201-222N	V RESISTOR,REC FM LEVEL	2.2KΩ,1/2W
R652	NVP1201-222N	V RESISTOR,VIDEO EQ	2.2KΩ,1/2W
R653	NVP1201-473N	V RESISTOR,PB Y LEVEL	47KΩ,1/2W
R654	NVP1201-683N	V RESISTOR,DARK CLIP	68KΩ,1/2W
R655	NVP1201-104N	V RESISTOR,WHITE CLIP	100KΩ,1/2W
R656	NVP1201-223N	V RESISTOR,CARRIER	22KΩ,1/2W
R657	NVP1201-103N	V RESISTOR,DEVIATION	10KΩ,1/2W
R658	NVP1201-103N	V RESISTOR,EE Y LEVEL	10KΩ,1/2W
R659	NVP1201-103N	V RESISTOR,EE BURST LEVEL	10KΩ,1/2W
R660	NVP1201-152N	V RESISTOR,1H DL SIG LEVEL	1.5KΩ,1/2W
R665	NVP1201-102N	V RESISTOR,PB COLOR LEVEL,EG	1KΩ,1/2W
R665	NVP1201-152N	V RESISTOR,PB COLOR LEVEL,EK/EA/EG(S)	1.5KΩ,1/2W
R666	NVP1201-223N	V RESISTOR,320FH VCO	22KΩ,1/2W
R667	NVP1201-222N	V RESISTOR,PB BURST LEVEL	2.2KΩ,1/2W
R668	NVP1201-221N	V RESISTOR,REC COLOR LEVEL	220Ω,1/2W
R691	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R692	NRSA63J-823N	RESISTOR	82KΩ,1/16W
R693	NRSA63J-271N	RESISTOR	270Ω,1/16W
R705	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R707	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R708	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R710	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
B601	QRS188J-0R0Y	RESISTOR,EK/EA/EG(S)	0Ω,1/8W
C2	NEE21DM-475RS	TANTAL CAPACITOR	4.7μF,20V
C3	NEE21DM-475RS	TANTAL CAPACITOR	4.7μF,20V
C4	NEE21DM-475RS	TANTAL CAPACITOR	4.7μF,20V
C5	NEE21DM-475RS	TANTAL CAPACITOR	4.7μF,20V
C7	NEE21AM-335RS	TANTAL CAPACITOR	3.3μF,10V
C8	NEE21DM-475RS	TANTAL CAPACITOR	4.7μF,20V
C9	NEE21DM-475RS	TANTAL CAPACITOR	4.7μF,20V
C10	NEE21AM-335RS	TANTAL CAPACITOR	3.3μF,10V
C16	QCTA1CH-5R0	CAPACITOR	5PF,16V
C17	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C18	QCTA1CH-271	CAPACITOR	270PF,16V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C19	QCTA1CH-181	CAPACITOR	180PF,16V
C20	QCTA1CH-181	CAPACITOR	180PF,16V
C21	QCTA1CH-681	CAPACITOR	680PF,16V
C32	YU40688-336N	E CAPACITOR	33μF
C33	YU41614-226N	NP E CAPACITOR	22μF
C34	NEA31EM-475NZ	E CAPACITOR	4.7μF,25V
C35	NEA31CM-106N	E CAPACITOR	10μF,16V
C38	NEA31HM-105NZ	E CAPACITOR	1μF,50V
C39	NEH10JM-226N	E CAPACITOR	22μF,6.3V
C40	NCB31HK-472A	CAPACITOR	0.0047μF,50V
C41	NEH11CM-106N	E CAPACITOR	10μF,16V
C43	NCB31HK-122A	CAPACITOR	0.0012μF,50V
C44	QCYA1HK-682	CAPACITOR,EK/EA/EG(S)	0.0068μF,50V
C45	NCS31HJ-221A	CAPACITOR	220PF,50V
C46	NEA31HM-105NZ	E CAPACITOR	1μF,50V
C47	NCB31HK-272A	CAPACITOR,EK/EA/EG(S)	0.0027μF,50V
C48	NCB31HK-681A	CAPACITOR	680PF,50V
C49	NEA30GM-226N	E CAPACITOR	22μF,4.0V
C50	NCR31CK-223A	CAPACITOR	0.022μF,16V
C51	YU40688-336N	E CAPACITOR	33μF
C52	NEE21EM-474RS	TANTAL CAPACITOR	0.47μF,25V
C53	NCB31HK-682A	CAPACITOR	0.0068μF,50V
C54	NCB31HK-332A	CAPACITOR	0.0033μF,50V
C55	NEE21VM-104RS	TANTAL CAPACITOR	0.1μF,35V
C57	NCB31HK-102A	CAPACITOR	0.001μF,50V
C58	NCB31HK-471A	CAPACITOR	470PF,50V
C61	NCT08CH-101A	CAPACITOR	100PF
C62	NCT08CH-101A	CAPACITOR	100PF
C63	NCT08CH-101A	CAPACITOR	100PF
C64	NCT08CH-101A	CAPACITOR	100PF
C65	NCT08CH-101A	CAPACITOR	100PF
C66	NCT08CH-101A	CAPACITOR	100PF
C67	NCT08CH-101A	CAPACITOR	100PF
C68	NCT08CH-101A	CAPACITOR	100PF
C71	YU40688-336N	E CAPACITOR	33μF
C72	NCB31HK-392A	CAPACITOR	0.0039μF,50V
C73	NCS31HJ-561A	CAPACITOR	560PF,50V
C74	PECA0780-333L	M CAPACITOR	
C75	NCB31HK-471A	CAPACITOR	470PF,50V
C76	NEE21CM-105RS	TANTAL CAPACITOR	1μF,16V
C77	NEE20GM-106RS	TANTAL CAPACITOR	10μF,4.0V
C78	NEE21CM-105RS	TANTAL CAPACITOR	1μF,16V
C79	YU41415-J156BW	TANTAL CAPACITOR	J.1μF
C80	YU41415-J156BW	TANTAL CAPACITOR	J.1μF
C101	NEH11CM-106N	E CAPACITOR	10μF,16V
C102	NEH11CM-106N	E CAPACITOR	10μF,16V
C103	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C105	NCB31HK-102A	CAPACITOR	0.001μF,50V
C106	NCB31HK-392A	CAPACITOR	0.0039μF,50V
C110	NCB31EK-103A	CAPACITOR	0.01μF,25V
C111	QCY81EK-104	CAPACITOR	0.1μF,25V
C112	NCB31HK-222A	CAPACITOR	0.0022μF,50V
C113	NCB31EK-223A	CAPACITOR	0.022μF,25V
C114	NCB31HK-102A	CAPACITOR	0.001μF,50V

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C115	NCB31HK-102A	CAPACITOR	0.001μF,50V
C116	QEPA1CM-226	E CAPACITOR	22μF,16V
C117	QCF81CZ-105	CAPACITOR	1μF,16V
C120	NCB31EK-223A	CAPACITOR	0.022μF,25V
C121	QCY81CK-224ZLM	CAPACITOR	0.22μF,16V
C122	NCB31HK-222A	CAPACITOR	0.0022μF,50V
C123	NCB31EK-223A	CAPACITOR	0.022μF,25V
C124	NCB31HK-102A	CAPACITOR	0.001μF,50V
C125	NCB31HK-102A	CAPACITOR	0.001μF,50V
C126	QEPA1CM-106	NP E CAPACITOR	10μF,16V
C127	QCF81CZ-105	CAPACITOR	1μF,16V
C128	QCF81CZ-105	CAPACITOR	1μF,16V
C130	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C131	NCS31HJ-100A	CAPACITOR	10PF,50V
C132	NCS31HJ-101A	CAPACITOR	100PF,50V
C134	NCB31HK-102A	CAPACITOR	0.001μF,50V
C135	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C136	NCT06CH-101A	CAPACITOR	100PF
C138	NCB31HK-562A	CAPACITOR	0.0056μF,50V
C139	QCF81CZ-105	CAPACITOR	1μF,16V
C140	QCF81CZ-105	CAPACITOR	1μF,16V
C141	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C147	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C148	NCB31EK-103A	CAPACITOR	0.01μF,25V
C150	NCB31EK-103A	CAPACITOR	0.01μF,25V
C151	NCR21CK-473A	CAPACITOR	0.047μF,16V
C152	NCB31EK-103A	CAPACITOR	0.01μF,25V
C153	NCB31EK-103A	CAPACITOR	0.01μF,25V
C155	NEH11CM-106N	E CAPACITOR	10μF,16V
C156	NCB31HK-102A	CAPACITOR	0.001μF,50V
C160	NEH11CM-106N	E CAPACITOR	10μF,16V
C161	NCT06CH-101A	CAPACITOR	100PF
C162	NCB31HK-472A	CAPACITOR	0.0047μF,50V
C175	NCB31EK-223A	CAPACITOR	0.022μF,25V
C176	NCB31EK-223A	CAPACITOR	0.022μF,25V
C177	NCB31EK-223A	CAPACITOR	0.022μF,25V
C178	NCB31HK-332A	CAPACITOR	0.0033μF,50V
C251	NEH11CM-106N	E CAPACITOR	10μF,16V
C252	NEH11HM-474NZ	E CAPACITOR	0.47μF,50V
C253	NCB31HK-331A	CAPACITOR	330PF,50V
C255	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C257	NCB31EK-103A	CAPACITOR	0.01μF,25V
C258	QCYA1EK-104	CAPACITOR	0.1μF,25V
C259	QCF81CZ-105	CAPACITOR	1μF,16V
C260	QCF81CZ-105	CAPACITOR	1μF,16V
C261	QCF81CZ-105	CAPACITOR	1μF,16V
C265	NCR21CK-473A	CAPACITOR	0.047μF,16V
C266	NEH11HM-105NZ	E CAPACITOR	1μF,50V
C267	NCB31EK-103A	CAPACITOR	0.01μF,25V
C268	NCB31HK-681A	CAPACITOR	680PF,50V
C269	NCB31HK-332A	CAPACITOR	0.0033μF,50V
C274	NCB31HK-102A	CAPACITOR	0.001μF,50V
C276	NCB31EK-223A	CAPACITOR	0.022μF,25V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C277	NCB31EK-223A	CAPACITOR	0.022μF,25V
C278	NCB31EK-223A	CAPACITOR	0.022μF,25V
C279	QCF81CZ-105	CAPACITOR	1μF,16V
C280	QCF81CZ-105	CAPACITOR	1μF,16V
C281	QCF81CZ-105	CAPACITOR	1μF,16V
C282	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C283	QCF81CZ-105	CAPACITOR	1μF,16V
C285	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C286	NCS31HJ-100A	CAPACITOR	10PF,50V
C301	YU40688-336N	E CAPACITOR	33μF
C302	YU40688-336N	E CAPACITOR	33μF
C303	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C304	NCB31EK-103A	CAPACITOR	0.01μF,25V
C305	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C306	NCB31EK-103A	CAPACITOR	0.01μF,25V
C307	NCB31EK-103A	CAPACITOR	0.01μF,25V
C308	NCB31EK-103A	CAPACITOR	0.01μF,25V
C309	NCS31HJ-220A	CAPACITOR	22PF,50V
C310	NCS31HJ-220A	CAPACITOR	22PF,50V
C311	NCB31EK-103A	CAPACITOR	0.01μF,25V
C312	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C313	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C314	NCB31EK-472A	CAPACITOR	0.0047μF,25V
C315	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C316	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C317	NCB31EK-103A	CAPACITOR	0.01μF,25V
C322	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C401	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C402	NCB31EK-223A	CAPACITOR	0.022μF,25V
C403	QCFA1CZ-105	CAPACITOR	1μF,16V
C404	QCFA1CZ-105	CAPACITOR	1μF,16V
C405	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C406	NCT06CH-101A	CAPACITOR	100PF
C501	NCB31EK-103A	CAPACITOR	0.01μF,25V
C502	NCS31HJ-121A	CAPACITOR	120PF,50V
C503	NCS31HJ-470A	CAPACITOR	47PF,50V
C504	NCB31EK-103A	CAPACITOR	0.01μF,25V
C505	NCS31HJ-330A	CAPACITOR	33PF,50V
C506	NCS31HJ-221A	CAPACITOR	220PF,50V
C507	NCS31HJ-121A	CAPACITOR	120PF,50V
C508	NCB31EK-103A	CAPACITOR	0.01μF,25V
C509	YU40688-476N	E CAPACITOR	47μF
C512	NCS31HJ-121A	CAPACITOR	120PF,50V
C513	NCB31EK-103A	CAPACITOR	0.01μF,25V
C514	NCS31HJ-270A	CAPACITOR	27PF,50V
C516	NCB31EK-103A	CAPACITOR	0.01μF,25V
C517	NCS31HJ-560A	CAPACITOR	56PF,50V
C518	NCS31HJ-390A	CAPACITOR	39PF,50V
C519	NCS31HJ-181A	CAPACITOR	180PF,50V
C522	NCS31HJ-470A	CAPACITOR	47PF,50V
C523	YU40688-476N	E CAPACITOR	47μF
C524	NCB31EK-103A	CAPACITOR	0.01μF,25V
C525	NCB31EK-103A	CAPACITOR	0.01μF,25V

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C536	NCB31EK-103A	CAPACITOR	0.01μF,25V
C537	NCB31EK-103A	CAPACITOR	0.01μF,25V
C538	NCS31HJ-470A	CAPACITOR	47PF,50V
C539	NCS31HJ-101A	CAPACITOR	100PF,50V
C540	NEA31CM-106N	E CAPACITOR	10μF,16V
C543	QCTA1CH-391	CAPACITOR	390PF,16V
C544	NEA31CM-106N	E CAPACITOR	10μF,16V
C545	NEA31CM-106N	E CAPACITOR	10μF,16V
C546	NCB31EK-103A	CAPACITOR	0.01μF,25V
C547	NCB31EK-103A	CAPACITOR	0.01μF,25V
C548	NCB31EK-103A	CAPACITOR	0.01μF,25V
C549	NCS31HJ-680A	CAPACITOR	68PF,50V
C551	NEA31HM-105NZ	E CAPACITOR	1μF,50V
C552	YU40688-476N	E CAPACITOR	47μF
C553	NCB31EK-103A	CAPACITOR	0.01μF,25V
C554	NCB31EK-103A	CAPACITOR	0.01μF,25V
C555	NEE21AM-335RS	TANTAL CAPACITOR	3.3μF,10V
C556	NEE21VM-224RS	TANTAL CAPACITOR	0.22μF,35V
C557	NEE21AM-335RS	TANTAL CAPACITOR	3.3μF,10V
C558	NEE20JM-475RS	TANTAL CAPACITOR	4.7μF,6.3V
C559	NCB31EK-103A	CAPACITOR	0.01μF,25V
C560	NCB31HK-332A	CAPACITOR	0.0033μF,50V
C561	NCB31EK-223A	CAPACITOR	0.022μF,25V
C562	NCS31HJ-330A	CAPACITOR	33PF,50V
C564	QER40JM-476	E CAPACITOR	47μF,6.3V
C565	QCYA1EK-104	CAPACITOR	0.1μF,25V
C572	NCB31EK-103A	CAPACITOR	0.01μF,25V
C573	NEA31HM-474N	E CAPACITOR	0.47μF,50V
C574	NEE21VM-474RS	TANTAL CAPACITOR	0.47μF,35V
C575	NEA31HM-105NZ	E CAPACITOR	1μF,50V
C577	NCB31EK-103A	CAPACITOR	0.01μF,25V
C578	YU40688-476N	E CAPACITOR	47μF
C581	NCS31HJ-150A	CAPACITOR,EK/EA/EG(S)	15PF,50V
C589	NCS31HJ-100A	CAPACITOR	10PF,50V
C591	NCS31HJ-101A	CAPACITOR,EK/EA/EG(S)	100PF,50V
C601	NCB31EK-103A	CAPACITOR	0.01μF,25V
C602	NCB31EK-103A	CAPACITOR	0.01μF,25V
C603	NCB31EK-103A	CAPACITOR	0.01μF,25V
C604	NCB31EK-103A	CAPACITOR	0.01μF,25V
C605	NCB31EK-103A	CAPACITOR	0.01μF,25V
C606	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
C607	QCYA1HK-333	CAPACITOR	0.033μF,50V
C609	QCYA1EK-683	CAPACITOR	0.068μF,25V
C610	QCYA1HK-153	CAPACITOR	0.015μF,50V
C611	QCYA1HK-333	CAPACITOR	0.033μF,50V
C612	NCB31HK-102A	CAPACITOR	0.001μF,50V
C613	NEA31CM-106N	E CAPACITOR	10μF,16V
C614	NCB31EK-103A	CAPACITOR	0.01μF,25V
C615	NCS31HJ-471A	CAPACITOR	470PF,50V
C616	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C617	NEE21AM-106RS	TANTAL CAPACITOR	10μF,10V
C618	NCB31EK-223A	CAPACITOR	0.022μF,25V
C619	NCB31EK-103A	CAPACITOR	0.01μF,25V
C620	NCB31EK-103A	CAPACITOR	0.01μF,25V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C621	NCB31EK-223A	CAPACITOR	0.022μF,25V
C622	NEA31VM-225N	E CAPACITOR	2.2μF,35V
C623	NEA31HM-105NZ	E CAPACITOR	1μF,50V
C624	NCB31EK-223A	CAPACITOR	0.022μF,25V
C625	NEA31VM-225N	E CAPACITOR	2.2μF,35V
C626	NCB31EK-223A	CAPACITOR	0.022μF,25V
C627	YU40688-476N	E CAPACITOR	47μF
C628	NCB31EK-103A	CAPACITOR	0.01μF,25V
C629	YU41582-200X	TRIMMER CAPACITOR,VXO	20PF
C630	NCS31HJ-5R0A	CAPACITOR	5PF,50V
C631	NCB31HK-102A	CAPACITOR	0.001μF,50V
C632	NCS31HJ-101A	CAPACITOR	100PF,50V
C633	NCB31EK-103A	CAPACITOR	0.01μF,25V
C635	NCB31EK-103A	CAPACITOR	0.01μF,25V
C636	NCB31EK-103A	CAPACITOR	0.01μF,25V
C637	NCB31EK-103A	CAPACITOR	0.01μF,25V
C638	NEE21VM-224RS	TANTAL CAPACITOR	0.22μF,35V
C639	NCB31EK-103A	CAPACITOR	0.01μF,25V
C640	NCB31EK-103A	CAPACITOR	0.01μF,25V
C641	NCB31EK-103A	CAPACITOR	0.01μF,25V
C642	YU40688-476N	E CAPACITOR	47μF
C643	NCB31EK-103A	CAPACITOR	0.01μF,25V
C645	NCS31HJ-220A	CAPACITOR	22PF,50V
C691	NCB31EK-103A	CAPACITOR	0.01μF,25V
C692	NCS31HJ-390A	CAPACITOR	39PF,50V
C693	NCB31EK-103A	CAPACITOR	0.01μF,25V
C694	NCS31HJ-220A	CAPACITOR	22PF,50V
C695	NCS31HJ-180A	CAPACITOR	18PF,50V
L1	YU41135-470	COIL	47μH
L2	QRS188J-0R0Y	RESISTOR	0Ω,1/8W
L16	YU41135-470	COIL	47μH
⚠ L17	YU41368	OSC COIL	
L18	PU58201-1R2K	COIL	1.2μH
L32	PELN0446	EQUALIZER	
L33	YU41135-221K	COIL	220μH
⚠ L34	YU41716	OSC COIL	
L101	YU41134-270J	COIL	27μH
L501	YU41134-121J	COIL	120μH
L502	YU41134-150J	COIL	15μH
L503	YU41134-220J	COIL	22μH
L504	YU41134-271J	COIL	270μH
L505	YU41134-680J	COIL	68μH
L506	YU41135-470	COIL	47μH
L508	YU41134-680J	COIL	68μH
L509	YU41134-560J	COIL	56μH
L510	YU41134-820J	COIL	82μH
L511	YU41134-220J	COIL	22μH
L512	YU41134-331J	COIL	330μH
L513	YU41135-470	COIL	47μH
L515	YU41134-180J	COIL	18μH
L521	YU41134-100J	COIL	10μH

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
L522	YU41134-560J	COIL	56μH
L524	YU41135-470	COIL	47μH
L531	YU41135-470	COIL	47μH
L533	PU58201-121K	COIL	120μH
L541	YU41134-330J	COIL,EK/EA/EG(S)	33μH
L601	YU41134-470J	COIL	47μH
L602	YU41135-470	COIL	47μH
L603	YU40941-682	COIL	6.8mH
L604	PU57620-102K	COIL	1mH
L605	YU41134-331J	COIL	330μH
L607	YU41134-331J	COIL	330μH
L608	YU41135-470	COIL	47μH
L609	YU41134-150J	COIL	15μH
L691	YU41134-5R6K	COIL	5.6μH
L692	YU41135-470	COIL	47μH
L693	YU41134-680J	COIL	68μH
TRAP1	YU41367	TRAP,FT101	
TRAP2	YU41365	TRAP,FT102	
EQ501	YU41810	EQUALIZER	
LPF501	PU59474-3	LOW PASS FILTER	
LPF502	YU41786	LOW PASS FILTER	
or	YU41855	LOW PASS FILTER	
LPF601	YU41789	LOW PASS FILTER	
LPF602	YU41790	LOW PASS FILTER	
or	YU41856	LOW PASS FILTER	
BPF601	YU41791	BAND PASS FILTER	
BPF602	YU41792	BAND PASS FILTER	
or	YU41858	BAND PASS FILTER	
DL601	YU41793	2H DELAY LINE	
⚠ X301	PEVB0372	CRYSTAL RESONATOR	
⚠ X601	YU40814	CRYSTAL RESONATOR	
SW1	YU41393	PUSH SWITCH(CASS SW)	
DD1	PEAS2033-02-01	DC-DC CONVERTER	
PS301	SIM-1251ST	LE DIODE	
SLD1	YU41869	SHIELD PLATE	
SLD2	YU41808	SHIELD PLATE	

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
SLD3	YU41874	SHIELDPLATE
SPC1	YQM30029-86	SPACER
WR1	YU41725	FE FPC
TP1	YU41389	TEST PIN,GND
TP2	YU41389	TEST PIN,REG 5V
TP3	YU41389	TEST PIN,REG8V
TP4	YU41389	TEST PIN,REG 12V
TP32	YU41389	TEST PIN,AUDIO OUT
TP33	YU41389	TEST PIN,REC BIAS
TP34	YU41389	TEST PIN,REC BIAS GND
TP101	YU41389	TEST PIN,PB CTL
TP102	YU41389	TEST PIN,CAPSTAN FG
TP103	YU41389	TEST PIN,AVG FM ENV
TP104	YU41389	TEST PIN,DRUM MON
TP105	YU41389	TEST PIN,CAPSTAN MON
TP106	YU41389	TEST PIN,DRUM PG/FG
TP107	YU41389	TEST PIN,DRUM FG
TP108	YU41389	TEST PIN,DRUM PG
TP109	YU41389	TEST PIN,DRUM FF
TP501	YU41389	TEST PIN,REC FM
TP502	YU41389	TEST PIN,PB DEMOD Y
TP503	YU41389	TEST PIN,PB 1H DL Y
TP504	YU41389	TEST PIN,EMPHASIS OUT
TP505	PU56278	TEST POINT,GND
TP508	YU41389	TEST PIN,VIDEO OUT
TP602	YU41389	TEST PIN,VCXO-1
TP603	YU41389	TEST PIN,VCXO-2
TP604	YU41389	TEST PIN,SUB BM OUT
TP605	YU41389	TEST PIN,PB COLOR
TP606	YU41389	TEST PIN,REC COLOR OUT
TP607	YU41389	TEST PIN,REC COLOR
TP608	YU41389	TEST PIN,BPF OUT
TP610	YU41389	TEST PIN,COLOR CTL
CN1	YU41356-8	CAP HOUSING
CN2	YU41849-6	CAP HOUSING(BOARD TO BOARD)
CN3	YU41356-5	CAP HOUSING
CN4	YU41355-7	CAP HOUSING
CN5	YU41361-12	CAP HOUSING,(BOARD TO BOARD)
CN6	YU41356-4	CAP HOUSING
CN7	YU41354-15	CAP HOUSING
CN8	YU41355-15	CAP HOUSING
CN9	YU41356-2	CAP HOUSING
CN10	YU41359-14	CAP HOUSING,(BOARD TO BOARD)
CN12	YU41356-7	CAP HOUSING,(BOARD TO BOARD)
CN13	YU41354-3	CAP HOUSING
CN14	YU41359-16	CAP HOUSING,(BOARD TO BOARD)
CN15	YU41849-10	CAP HOUSING,(BOARD TO BOARD)
CN16	YU41356-2	CAP HOUSING
CN17	YU41356-3	CAP HOUSING

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
CN18	YU41356-2	CAP HOUSING
CN19	YU41849-6	CAP HOUSING(BOARD TO BOARD)
CN20	YU41740-6	CAP HOUSING(BOARD TO BOARD)
⚠ CP1	ICP-N25	CIRCUIT PROTECTOR
⚠ CP2	ICP-N20	CIRCUIT PROTECTOR
⚠ CP3	ICP-N38	CIRCUIT PROTECTOR
⚠ CP4	ICP-N20	CIRCUIT PROTECTOR
⚠ CP5	ICP-N38	CIRCUIT PROTECTOR

****

JACK BOARD ASSEMBLY <02>

PWBA	YB20479A	JACK BOARD ASSY	
IC1	M5282FP	IC	
Q1	2SK665	TRANSISTOR	
Q2	2SK198	FE TRANSISTOR	
D1	RLZ8.2B	ZENER DIODE	
D2	DA204U	DIODE	
R1	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
R2	QRSA08J-473YN	RESISTOR	47KΩ,1/10W
R3	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R4	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R5	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
R6	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R7	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R8	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
R9	QRSA08J-683YN	RESISTOR	68KΩ,1/10W
R10	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R11	NRD187J-100N	RESISTOR	10Ω,1/8W
R12	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R13	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R14	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R15	NRD187J-750NN	RESISTOR	75Ω,1/8W
R16	NRD187J-102NN	RESISTOR	1KΩ,1/8W
R17	NRD187J-102NN	RESISTOR	1KΩ,1/8W
R19	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R20	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R21	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
R22	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
R23	QRSA08J-103YN	RESISTOR	10KΩ,1/10W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C1	YU40688-476N	E CAPACITOR	47μF
C2	YU40688-476N	E CAPACITOR	47μF
C3	NEA31HM-474N	E CAPACITOR	0.47μF,50V
C4	QCTA1CH-101	CAPACITOR	100PF,16V
C5	NEA31HM-105N	E CAPACITOR	1μF,50V
C6	QCSA1HJ-681	CAPACITOR	680PF,50V
C7	YU40688-476N	E CAPACITOR	47μF
C8	QCYA1HK-822	CAPACITOR	0.0082μF,50V
C9	QER40GM-477	E CAPACITOR	470μF,4.0V
C10	QCYA1HK-222	CAPACITOR	0.0022μF,50V
C11	QCYA1HK-222	CAPACITOR	0.0022μF,50V
C12	NEH11CM-106N	E CAPACITOR	10μF,16V
C18	NEE20GM-106R	TANTAL CAPACITOR	10μF,4.0V
C19	NEA31VM-225N	E CAPACITOR	2.2μF,35V
C20	NEA31EM-475N	E CAPACITOR	4.7μF,25V
C21	NEA31HM-474N	E CAPACITOR	0.47μF,50V
L1	QRS188J-0R0Y	RESISTOR	0Ω,1/8W
J1	YQ42233	AV JACK ASSY	
CN1	PEMC0822-6	CAP HOUSING,(BOARD TO BOARD)	
CN2	PEMC0822-6	CAP HOUSING,(BOARD TO BOARD)	

****

PRE REC BOARD ASSEMBLY <03>

PWBA	BW8079	IC

****

SENSOR BOARD ASSEMBLY <04>

PWBA	YQ30763C	SENSER BOARD ASSY

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION

****

TRIGGER BOARD ASSEMBLY <05>

	PWBA	YB20360A-01	TRIGGER BOARD ASSY
	SW1	YU41685	TACT SWITCH

****

OPERATION (CAMERA) BOARD ASSEMBLY < 07 >

	PWBA	YQ30975-1-2	OPERATION BOARD ASSY

****

END SENSOR BRACKET ASSEMBLY <08>

	PWBA	YQ41594B-6	END SENSER BRACKET ASSY

****

CPU BOARD ASSEMBLY <11>

	PWBA	YB20338M-07	CPU BOARD ASSY
	IC1	M37120M6-116FP	IC
	IC2	CAT93C46K	IC
	IC3	S-8054HN-CB	IC
	IC4	S-8052ANB-NE	IC
	IC5	AN1393S	IC
		or LM393PS	IC
	IC6	TC7S04F	IC
	IC7	S-81250HG-RD	IC
		or RH5RA50AA	IC
	IC8	TC4S584F	IC
	IC9	TC7S32F	IC
	IC10	TC7S32F	IC
	Q1	DTC124EU	TRANSISTOR
	D1	RB451F	DIODE
⚠	D2	MA704	DIODE
⚠	D3	MA704	DIODE
⚠	D4	MA704	DIODE
	D5	RD7.5M(B2)	ZENER DIODE
	D7	RD7.5M(B2)	ZENER DIODE
	D8	RD7.5M(B2)	ZENER DIODE

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	R1	NRSA63J-0R0A	RESISTOR 0Ω,1/16W
	R2	NRSA63J-103N	RESISTOR 10KΩ,1/16W
	R4	NRSA63J-100N	RESISTOR 10Ω,1/16W
	R5	NRSA63J-100N	RESISTOR 10Ω,1/16W
	R6	NRSA63J-0R0A	RESISTOR 0Ω,1/16W
	R7	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R8	NRSA63J-103N	RESISTOR 10KΩ,1/16W
	R11	NRSA63J-103N	RESISTOR 10KΩ,1/16W
⚠	R12	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R13	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R14	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R15	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R16	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R17	NRSA63J-471N	RESISTOR 470Ω,1/16W
	R18	NRSA63J-223N	RESISTOR 22KΩ,1/16W
	R19	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R20	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R21	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R22	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R23	NRSA63J-471N	RESISTOR 470Ω,1/16W
	R24	NRSA63J-471N	RESISTOR 470Ω,1/16W
	R25	NRSA63J-471N	RESISTOR 470Ω,1/16W
	R26	NRSA63J-471N	RESISTOR 470Ω,1/16W
	R27	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R28	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R29	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R30	NRSA63J-102N	RESISTOR 1KΩ,1/16W
	R31	NRSA63J-104N	RESISTOR 100KΩ,1/16W
	R32	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R33	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R34	NRSA63J-475N	RESISTOR 4.7MΩ,1/16W
	R35	NRSA63J-105N	RESISTOR 1MΩ,1/16W
	R36	NRSA63J-125N	RESISTOR 1.2MΩ,1/16W
	R37	NRSA63J-125N	RESISTOR 1.2MΩ,1/16W
	R38	NRSA63J-104N	RESISTOR 100KΩ,1/16W
	R39	NRSA63J-684N	RESISTOR 680KΩ,1/16W
	R40	NRSA63J-102N	RESISTOR 1KΩ,1/16W
	R41	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R42	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R43	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R44	NRSA63J-100N	RESISTOR 10Ω,1/16W
	R45	NRSA63J-100N	RESISTOR 10Ω,1/16W
	R46	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R47	NRSA63J-101N	RESISTOR 100Ω,1/16W
	R48	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
	R49	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R50	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R51	NRSA63J-103N	RESISTOR 10KΩ,1/16W
	R53	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R54	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R55	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R56	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R57	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R58	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R59	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
	R60	NRSA63J-223N	RESISTOR 22KΩ,1/16W

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R61	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R62	NRSA63J-223N	RESISTOR	22KΩ,1/16W
R65	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R66	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R67	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R70	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R71	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R72	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R73	NRSA63J-100N	RESISTOR	10Ω,1/16W
R74	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R75	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R76	QRSA08J-471Y	RESISTOR	470Ω,1/10W
C1	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C2	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C3	YU40265-3	E CAPACITOR	
or	QEM70JM-337	E CAPACITOR	330μF,6.3V
C4	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C5	QCFA1CZ-105	CAPACITOR	1μF,16V
C6	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C7	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C8	NCT07CH-300A	CAPACITOR	30PF
C10	PU56274-200	TRIMMER CAPACITOR,IND POSITION	20PF
or	PECA0779-200X	TRIMMER CAPACITOR,IND POSITION	
C11	NCT07CH-200A	CAPACITOR	20PF
C12	NCT07CH-200A	CAPACITOR	20PF
C15	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C16	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C17	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C18	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C19	NCB31EK-103A	CAPACITOR	0.01μF,25V
L1	YU40740-220K	COIL	22μH
or	YU41135-220K	COIL	22μH
L3	YU40740-390K	COIL	39μH
or	YU41135-390K	COIL	39μH
⚠ X1	YU40141	CRYSTAL RESONATOR	
⚠ X2	PEVB0363	RESONATOR	
SPC1	YQM30029-83	SPACER	
CN-11	YU41361-16	CAP HOUSING,(BOARD TO BOARD)	
CN-12	YU41361-30	CAP HOUSING,(BOARD TO BOARD)	
CN-13	YU41359-14	CAP HOUSING,(BOARD TO BOARD)	
CN-14	YU41361-16	CAP HOUSING,(BOARD TO BOARD)	
CN-15	YU41356-7	CAP HOUSING,(BOARD TO BOARD)	
CN-16	YU41356-9	CAP HOUSING,(BOARD TO BOARD)	

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION

****

VIDEO BOARD ASSEMBLY <12>

PWBA	YB20414F-02	VIDEO BOARD ASSY
IC1	HA118168MA	IC
IC2	BA7606F	IC
IC3	TC7S04F	IC
IC4	TC7S04F	IC
IC5	MC8181K	IC
or	EHD-GA1389	IC
IC11	BU2707K	IC
IC12	MN4464S-08LL	IC
or	FCB61C65LL	IC
or	MS6264CLL-10-X	IC
IC31	JCY0011	IC
IC32	LM393DB	IC
Q1	2SC3936(BC)	TRANSISTOR
or	2SC4098(PQ)	TRANSISTOR
Q2	2SD1819(QR)	TRANSISTOR
or	2SC4081(QRS)	TRANSISTOR
Q3	2SA1532(BC)	TRANSISTOR
Q4	2SA1532(BC)	TRANSISTOR
Q5	2SC3936(BC)	TRANSISTOR
or	2SC4098(PQ)	TRANSISTOR
Q6	2SA1532(BC)	TRANSISTOR
Q7	2SC3936(BC)	TRANSISTOR
or	2SC4098(PQ)	TRANSISTOR
Q8	2SD1819(QR)	TRANSISTOR
or	2SC4081(QRS)	TRANSISTOR
Q9	2SC3936(BC)	TRANSISTOR
or	2SC4098(PQ)	TRANSISTOR
Q10	2SC3936(BC)	TRANSISTOR
or	2SC4098(PQ)	TRANSISTOR
Q12	2SC3936(BC)	TRANSISTOR
Q13	2SC3936(BC)	TRANSISTOR
or	2SC4098(PQ)	TRANSISTOR
Q14	2SC3936(BC)	TRANSISTOR
or	2SC4098(PQ)	TRANSISTOR
Q15	2SC3936(BC)	TRANSISTOR
or	2SC4098(PQ)	TRANSISTOR
Q16	2SC3936(BC)	TRANSISTOR
or	2SC4098(PQ)	TRANSISTOR
Q17	2SC3936(BC)	TRANSISTOR
or	2SC4098(PQ)	TRANSISTOR
Q18	2SC3936(BC)	TRANSISTOR
or	2SC4098(PQ)	TRANSISTOR
Q19	2SC3936(BC)	TRANSISTOR
or	2SC4098(PQ)	TRANSISTOR
Q20	2SC3936(BC)	TRANSISTOR
or	2SC4098(PQ)	TRANSISTOR

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
Q21	2SC3936(BC)	TRANSISTOR	
	or 2SC4098(PQ)	TRANSISTOR	
Q22	2SD1819(QRS)	TRANSISTOR	
	or 2SC4081(QRS)	TRANSISTOR	
Q23	2SD1819(QRS)	TRANSISTOR	
	or 2SC4081(QRS)	TRANSISTOR	
Q25	2SC3936(BC)	TRANSISTOR	
	or 2SC4098(PQ)	TRANSISTOR	
Q26	2SC3936(BC)	TRANSISTOR	
	or 2SC4098(PQ)	TRANSISTOR	
Q27	2SA1532(BC)	TRANSISTOR	
Q30	2SA1532(BC)	TRANSISTOR	
Q31	2SC3936(BC)	TRANSISTOR	
	or 2SC4098(PQ)	TRANSISTOR	
Q32	2SC3936(BC)	TRANSISTOR	
	or 2SC4098(PQ)	TRANSISTOR	
Q33	2SC3936(BC)	TRANSISTOR	
	or 2SC4098(PQ)	TRANSISTOR	
Q34	2SC3936(BC)	TRANSISTOR	
	or 2SC4098(PQ)	TRANSISTOR	
Q35	2SC3936(BC)	TRANSISTOR	
	or 2SC4098(PQ)	TRANSISTOR	
Q36	2SA1532(BC)	TRANSISTOR	
Q37	2SA1532(BC)	TRANSISTOR	
D2	MA141WA	DIODE	
D10	MA366	DIODE	
D14	RB451F	DIODE	
R1	NRSA63J-392N	RESISTOR	3.9KΩ,1/16W
R3	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R5	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R6	NVP1201-103N	V RESISTOR,R ENCODER BAL	10KΩ,1/2W
R7	NVP1201-103N	V RESISTOR,B ENCODER BAL	10KΩ,1/2W
R8	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
R9	NRSA63J-333N	RESISTOR	33KΩ,1/16W
R10	NRVA63D-203N	RESISTOR	20KΩ,1/16W
R11	NRVA63D-103N	RESISTOR	10KΩ,1/16W
R12	NRSA63J-562N	RESISTOR	5.6KΩ,1/16W
R14	NRSA63J-562N	RESISTOR	5.6KΩ,1/16W
R15	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
R16	NRSA63J-362N	RESISTOR	3.6KΩ,1/16W
R17	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
R18	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R19	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
R20	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
R21	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R22	NRSA63J-392N	RESISTOR	3.9KΩ,1/16W
R23	NRSA63J-332N	RESISTOR	3.3KΩ,1/16W
R24	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R25	NRSA63J-823N	RESISTOR	82KΩ,1/16W
R26	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
R27	NVP1201-472N	V RESISTOR,B-Y LEVEL	4.7KΩ,1/2W
R28	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
R29	NRSA63J-333N	RESISTOR	33KΩ,1/16W
R30	NRSA63J-103N	RESISTOR	10KΩ,1/16W

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R31	NRSA63J-912N	RESISTOR	9.1KΩ,1/16W
R32	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R35	NRSA63J-123N	RESISTOR	12KΩ,1/16W
R36	NVP1201-472N	V RESISTOR,Y LEVEL	4.7KΩ,1/2W
R37	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
R39	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R40	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R42	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R44	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R45	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
R46	NRSA63J-123N	RESISTOR	12KΩ,1/16W
R47	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R48	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
R49	NRSA63J-123N	RESISTOR	12KΩ,1/16W
R50	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R52	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
R54	NRSA63J-123N	RESISTOR	12KΩ,1/16W
R55	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R57	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R60	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R61	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R62	NRSA63J-362N	RESISTOR	3.6KΩ,1/16W
R63	NRSA63J-242N	RESISTOR	2.4KΩ,1/16W
R65	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
R66	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R67	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R68	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R69	NRSA63J-473N	RESISTOR	47KΩ,1/16W
R70	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R71	NRSA63J-392N	RESISTOR	3.9KΩ,1/16W
R72	NRVA63D-912N	RESISTOR	9.1KΩ,1/16W
R73	NRVA63D-203N	RESISTOR	20KΩ,1/16W
R74	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
R75	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
R76	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
R77	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
R78	NRSA63J-332N	RESISTOR	3.3KΩ,1/16W
R79	NRSA63J-153N	RESISTOR	15KΩ,1/16W
R80	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R82	NRVA63D-472N	RESISTOR	4.7KΩ,1/16W
R83	NRVA63D-183N	RESISTOR	18KΩ,1/16W
R84	NRVA63D-472N	RESISTOR	4.7KΩ,1/16W
R85	NVP1201-103N	V RESISTOR,BURST PHASE	10KΩ,1/2W
R86	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R87	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R88	NRVA63D-153N	RESISTOR	15KΩ,1/16W
R89	NVP1201-472N	V RESISTOR,BURST LEVEL	4.7KΩ,1/2W
R90	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R91	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R94	NRSA63J-203N	RESISTOR	20KΩ,1/16W
R95	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R96	NRVA63D-132N	RESISTOR	1.3KΩ,1/16W
R97	NRSA63J-562N	RESISTOR	5.6KΩ,1/16W
R98	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R99	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R100	NRSA63J-102N	RESISTOR	1KΩ,1/16W

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R101	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R102	NVP1201-103N	V RESISTOR,COLOR LEVEL	10KΩ,1/2W
R103	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R104	NRSA63J-332N	RESISTOR	3.3KΩ,1/16W
R106	NRSA63J-682N	RESISTOR	6.8KΩ,1/16W
R111	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
R112	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R115	NRSA63J-392N	RESISTOR	3.9KΩ,1/16W
R116	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R117	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
R118	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R123	NRSA63J-563N	RESISTOR	56KΩ,1/16W
R127	NRSA63J-393N	RESISTOR	39KΩ,1/16W
R129	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R130	NRSA63J-562N	RESISTOR	5.6KΩ,1/16W
R131	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R132	NRSA63J-562N	RESISTOR	5.6KΩ,1/16W
R134	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R135	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R136	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
R137	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
R140	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
R142	NRSA63J-152N	RESISTOR	1.5KΩ,1/16W
R143	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
R151	NRSA63J-153N	RESISTOR	15KΩ,1/16W
R152	NRSA63J-393N	RESISTOR	39KΩ,1/16W
R153	NVP1201-473N	V RESISTOR,R GAIN	47KΩ,1/2W
R154	NRSA63J-153N	RESISTOR	15KΩ,1/16W
R155	NRSA63J-393N	RESISTOR	39KΩ,1/16W
R156	NVP1201-473N	V RESISTOR,B GAIN	47KΩ,1/2W
R160	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R161	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R162	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R171	NRSA63J-562N	RESISTOR	5.6KΩ,1/16W
R172	NRSA63J-332N	RESISTOR	3.3KΩ,1/16W
R173	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R174	NRSA63J-203N	RESISTOR	20KΩ,1/16W
R175	NRSA63J-562N	RESISTOR	5.6KΩ,1/16W
R176	NRSA63J-332N	RESISTOR	3.3KΩ,1/16W
R177	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
R178	NRSA63J-203N	RESISTOR	20KΩ,1/16W
R179	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R180	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R181	NRSA63J-562N	RESISTOR	5.6KΩ,1/16W
R182	NRSA63J-363N	RESISTOR	36KΩ,1/16W
R183	NRSA63J-753N	RESISTOR	75KΩ,1/16W
R184	NRSA63J-224N	RESISTOR	220KΩ,1/16W
R185	NRSA63J-363N	RESISTOR	36KΩ,1/16W
R187	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R190	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
R191	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
R192	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R193	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R194	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R195	NRSA63J-103N	RESISTOR	10KΩ,1/16W
R200	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
R210	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R211	NRSA63J-511N	RESISTOR	510Ω,1/16W
B1	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
B2	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
B3	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
B4	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
B5	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
C1	NCT07CH-101A	CAPACITOR	100PF
C2	QCFA1CZ-105	CAPACITOR	1μF,16V
C3	QCFA1CZ-105	CAPACITOR	1μF,16V
C5	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C6	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C7	NCR21CK-473A	CAPACITOR	0.047μF,16V
	or PU59913-473K	CAPACITOR	0.047μF
C8	NCR21CK-473A	CAPACITOR	0.047μF,16V
	or PU59913-473K	CAPACITOR	0.047μF
C9	NCR21CK-473A	CAPACITOR	0.047μF,16V
	or PU59913-473K	CAPACITOR	0.047μF
C10	NCR21CK-473A	CAPACITOR	0.047μF,16V
	or PU59913-473K	CAPACITOR	0.047μF
C11	NCR21CK-473A	CAPACITOR	0.047μF,16V
	or PU59913-473K	CAPACITOR	0.047μF
C12	NCR21CK-473A	CAPACITOR	0.047μF,16V
	or PU59913-473K	CAPACITOR	0.047μF
C13	NCR21CK-473A	CAPACITOR	0.047μF,16V
	or PU59913-473K	CAPACITOR	0.047μF
C16	NCR21CK-473A	CAPACITOR	0.047μF,16V
C17	NCR21CK-473A	CAPACITOR	0.047μF,16V
	or PU59913-473K	CAPACITOR	0.047μF
C22	NCT07CH-101A	CAPACITOR	100PF
C23	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C24	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C25	NCR21CK-473A	CAPACITOR	0.047μF,16V
	or PU59913-473K	CAPACITOR	0.047μF
C26	NCR21CK-473A	CAPACITOR	0.047μF,16V
C28	NCB31EK-103A	CAPACITOR	0.01μF,25V
C29	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C30	NCB31EK-103A	CAPACITOR	0.01μF,25V
C31	NCB31EK-103A	CAPACITOR	0.01μF,25V
C32	NCB31EK-103A	CAPACITOR	0.01μF,25V
C33	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C34	QCFA1CZ-105	CAPACITOR	1μF,16V
C35	NCT07CH-221A	CAPACITOR	220PF
C37	NCB31EK-103A	CAPACITOR	0.01μF,25V
C38	NCB31EK-103A	CAPACITOR	0.01μF,25V
C39	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C40	QEM70JM-107	E CAPACITOR	100μF,6.3V
C41	NCR21CK-473A	CAPACITOR	0.047μF,16V
	or PU59913-473K	CAPACITOR	0.047μF

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C42	NCR21CK-473A	CAPACITOR	0.047μF,16V
	or PU59913-473K	CAPACITOR	0.047μF
C43	NCR21CK-473A	CAPACITOR	0.047μF,16V
	or PU59913-473K	CAPACITOR	0.047μF
C44	NCR21CK-473A	CAPACITOR	0.047μF,16V
	or PU59913-473K	CAPACITOR	0.047μF
C45	NCR21CK-473A	CAPACITOR	0.047μF,16V
	or PU59913-473K	CAPACITOR	0.047μF
C46	NCR21CK-473A	CAPACITOR	0.047μF,16V
	or PU59913-473K	CAPACITOR	0.047μF
C55	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C56	NCT07CH-560A	CAPACITOR	56PF
C57	NCT07CH-560A	CAPACITOR	56PF
C58	NCT07CH-560A	CAPACITOR	56PF
C59	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C60	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C61	NCB31EK-103A	CAPACITOR	0.01μF,25V
C62	NCT07CH-5R0A	CAPACITOR	5PF
C71	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C73	NEE20GM-335RS	TANTAL CAPACITOR	3.3μF,4.0V
C74	NCB31EK-103A	CAPACITOR	0.01μF,25V
C75	PECA0795-200C	TRIMMER CAPACITOR,TITLE POSITION	
C76	NCT07CH-270A	CAPACITOR	27PF
C78	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C79	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C83	NCB31EK-103A	CAPACITOR	0.01μF,25V
C89	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C91	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C93	NEE21AM-105RS	TANTAL CAPACITOR	1μF,10V
C99	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C100	NCT07CH-390A	CAPACITOR	39PF
C101	NCF31CZ-104A	CAPACITOR	0.1μF,16V
L1	PELN0325-220K	COIL	
L2	QRS188J-0R0Y	RESISTOR	0Ω,1/8W
L3	YU40740-220K	COIL	22μH
L4	QRSA08J-682YN	RESISTOR	6.8KΩ,1/10W
L5	PU58201-150J	COIL	15μH
L6	YU40740-220K	COIL	22μH
BPF1	PELN0371-02	BAND PASS FILTER	
	or PELN0518	BAND PASS FILTER	
DL1	YU41628	DELAY LINE	
DL2	PELN0425	LOW PASS FILTER	
T1	QXTE104-010	TUBE	
T2	QXTE104-015	TUBE	
SPC1	YQM30029-87	SPACER	

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
TP1	YU41389	TEST PIN,CNR	
TP2	YU41389	TEST PIN,B-Y	
TP3	YU41389	TEST PIN,R-Y	
TP4	YU41389	TEST PIN,V EDGE	
TP5	YU41389	TEST PIN,B	
TP6	YU41389	TEST PIN,YH	
TP7	YU41389	TEST PIN,FD OUT	
TP8	YU41389	TEST PIN,GND	
TP9	YU41389	TEST PIN,C OH	
CN21	YU41361-10	CAP HOUSING,(BOARD TO BOARD)	
CN22	YU41359-30	CAP HOUSING,(BOARD TO BOARD)	
CN23	YU41359-8	CAP HOUSING,(BOARD TO BOARD)	
CN24	YU41359-30	CAP HOUSING,(BOARD TO BOARD)	

– Y G UP BOARD ASSEMBLY –

PWBA	YB20448A	Y G UP BOARD ASSY	
IC1	TC4S66F	IC	
Q1	2SB1218(QR)	TRANSISTOR	
D1	MA704	DIODE	
R1	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
R2	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
C1	NCB31EK-103A	CAPACITOR	0.01μF,25V
C2	NCB31EK-103A	CAPACITOR	0.01μF,25V

Free service manuals
Gratis schema's
Digitized by
www.freeservicemanuals.info

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

SSG BOARD ASSEMBLY <13>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
PWBA	YB20419G-03	SSG BOARD ASSY
IC1	MN5180	IC
IC2	IR3P67A	IC
IC3	MSM6819MS	IC
IC4	MN3820S	IC
Q1	2SC3936(BC)	TRANSISTOR
	or 2SC4098(PQ)	TRANSISTOR
Q2	2SA1532(BC)	TRANSISTOR
Q3	2SC3936(BC)	TRANSISTOR
	or 2SC4098(PQ)	TRANSISTOR
Q4	2SA1532(BC)	TRANSISTOR
Q5	2SC3936(BC)	TRANSISTOR
	or 2SC4098(PQ)	TRANSISTOR
Q6	2SA1532(BC)	TRANSISTOR
Q8	2SA1532(BC)	TRANSISTOR
Q9	2SC3936(BC)	TRANSISTOR
	or 2SC4098(PQ)	TRANSISTOR
Q10	2SA1532(BC)	TRANSISTOR
Q11	2SC3936(BC)	TRANSISTOR
	or 2SC4098(PQ)	TRANSISTOR
Q12	2SA1532(BC)	TRANSISTOR
Q13	2SC3936(BC)	TRANSISTOR
	or 2SC4098(PQ)	TRANSISTOR
Q15	2SC3936(BC)	TRANSISTOR
	or 2SC4098(PQ)	TRANSISTOR
Q16	2SA1532(BC)	TRANSISTOR
Q17	2SC3936(BC)	TRANSISTOR
	or 2SC4098(PQ)	TRANSISTOR
Q18	2SC3936(BC)	TRANSISTOR
	or 2SC4098(PQ)	TRANSISTOR
D1	MA141WK	DIODE
D2	RB717F	DIODE
R1	YU41218-103NZ	V RESISTOR,1H DELAYED SIG LEVEL
R2	NRSA63J-681N	RESISTOR 680Ω,1/16W
R3	NRSA63J-102N	RESISTOR 1KΩ,1/16W
R4	NRSA63J-562N	RESISTOR 5.6KΩ,1/16W
R5	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
R6	NRSA63J-102N	RESISTOR 1KΩ,1/16W
R7	NRSA63J-332N	RESISTOR 3.3KΩ,1/16W
R8	YU41218-103NZ	V RESISTOR,CNR BARANCE
R9	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
R10	NRSA63J-102N	RESISTOR 1KΩ,1/16W
R11	NRSA63J-332N	RESISTOR 3.3KΩ,1/16W
R12	YU41218-103NZ	V RESISTOR,COLOR DET BAL
R13	NRSA63J-473N	RESISTOR 47KΩ,1/16W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
R14	NRSA63J-102N	RESISTOR 1KΩ,1/16W
R15	NRSA63J-474N	RESISTOR 470KΩ,1/16W
R16	NRSA63J-103N	RESISTOR 10KΩ,1/16W
R17	NRSA63J-102N	RESISTOR 1KΩ,1/16W
R18	NRSA63J-102N	RESISTOR 1KΩ,1/16W
R19	NRSA63J-222N	RESISTOR 2.2KΩ,1/16W
R21	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
R22	YU41218-103NZ	V RESISTOR,R/B SEPA
R23	NRSA63J-102N	RESISTOR 1KΩ,1/16W
R24	NRSA63J-561N	RESISTOR 560Ω,1/16W
R25	NRSA63J-101N	RESISTOR 100Ω,1/16W
R26	NRSA63J-471N	RESISTOR 470Ω,1/16W
R27	NRSA63J-332N	RESISTOR 3.3KΩ,1/16W
R28	NRSA63J-561N	RESISTOR 560Ω,1/16W
R29	NRSA63J-101N	RESISTOR 100Ω,1/16W
R30	NRSA63J-471N	RESISTOR 470Ω,1/16W
R31	NRSA63J-332N	RESISTOR 3.3KΩ,1/16W
R32	NRSA63J-561N	RESISTOR 560Ω,1/16W
R33	NRSA63J-0R0A	RESISTOR 0Ω,1/16W
R34	NRSA63J-561N	RESISTOR 560Ω,1/16W
R35	NRSA63J-272N	RESISTOR 2.7KΩ,1/16W
R36	NRSA63J-223N	RESISTOR 22KΩ,1/16W
R37	NRSA63J-333N	RESISTOR 33KΩ,1/16W
R38	NRSA63J-564N	RESISTOR 560KΩ,1/16W
R39	NRSA63J-104N	RESISTOR 100KΩ,1/16W
R40	NRSA63J-121N	RESISTOR 120Ω,1/16W
R41	NRSA63J-0R0A	RESISTOR 0Ω,1/16W
R42	NRSA63J-470N	RESISTOR 47Ω,1/16W
R43	NRSA63J-470N	RESISTOR 47Ω,1/16W
R44	NRSA63J-101N	RESISTOR 100Ω,1/16W
R45	NRSA63J-101N	RESISTOR 100Ω,1/16W
R46	NRSA63J-101N	RESISTOR 100Ω,1/16W
R47	NRSA63J-101N	RESISTOR 100Ω,1/16W
R48	NRSA63J-0R0A	RESISTOR 0Ω,1/16W
R49	NRSA63J-332N	RESISTOR 3.3KΩ,1/16W
R50	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
R51	NRSA63J-242N	RESISTOR 2.4KΩ,1/16W
R52	NRSA63J-152N	RESISTOR 1.5KΩ,1/16W
R54	NRSA63J-133N	RESISTOR 13KΩ,1/16W
R56	NRSA63J-105N	RESISTOR 1MΩ,1/16W
R57	NRSA63J-102N	RESISTOR 1KΩ,1/16W
R58	NRSA63J-0R0A	RESISTOR 0Ω,1/16W
R60	NRSA63J-393N	RESISTOR 39KΩ,1/16W
R61	NRSA63J-393N	RESISTOR 39KΩ,1/16W
R62	NRSA63J-0R0A	RESISTOR 0Ω,1/16W
R63	NRSA63J-203N	RESISTOR 20KΩ,1/16W
R64	NRSA63J-202N	RESISTOR 2KΩ,1/16W
R65	NRSA63J-822N	RESISTOR 8.2KΩ,1/16W
R66	NRSA63J-0R0A	RESISTOR 0Ω,1/16W
R71	NRSA63J-0R0A	RESISTOR 0Ω,1/16W
C2	NCF31CZ-104A	CAPACITOR 0.1μF,16V
C3	NCB31EK-103A	CAPACITOR 0.01μF,25V
C4	NCB31EK-103A	CAPACITOR 0.01μF,25V
C5	QCFA1CZ-105	CAPACITOR 1μF,16V

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C6	NEE20JM-225RS	TANTAL CAPACITOR	2.2μF,6.3V
C7	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C8	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C9	NEA21CM-106N	E CAPACITOR	10μF,16V
C10	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C11	NEE21AM-105RS	TANTAL CAPACITOR	1μF,10V
C12	NEE21AM-105RS	TANTAL CAPACITOR	1μF,10V
C13	NEE21AM-105RS	TANTAL CAPACITOR	1μF,10V
C14	NCB31EK-103A	CAPACITOR	0.01μF,25V
C15	NCB31EK-103A	CAPACITOR	0.01μF,25V
C17	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C18	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C19	QCYA1EK-104	CAPACITOR	0.1μF,25V
C20	NEE20JM-475RS	TANTAL CAPACITOR	4.7μF,6.3V
C21	NEA20JM-107NP	E CAPACITOR	100μF,6.3V
C22	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C23	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C24	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C25	NEE20JM-475RS	TANTAL CAPACITOR	4.7μF,6.3V
C26	NEE20JM-475RS	TANTAL CAPACITOR	4.7μF,6.3V
C27	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C28	NEE20JM-225RS	TANTAL CAPACITOR	2.2μF,6.3V
C29	NEE20JM-225RS	TANTAL CAPACITOR	2.2μF,6.3V
C30	NEE20JM-475RS	TANTAL CAPACITOR	4.7μF,6.3V
C31	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C32	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C33	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C34	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C35	NEA20JM-107NP	E CAPACITOR	100μF,6.3V
C36	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C37	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C38	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C39	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C40	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C41	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C42	NCT07CH-221A	CAPACITOR	220PF
C43	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C44	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C45	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C46	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C47	NCT07CH-560A	CAPACITOR	56PF
C48	NCT07CH-560A	CAPACITOR	56PF
C49	PU56274-200	TRIMMER CAPACITOR,OSC	20PF
	or PECA0779-200X	TRIMMER CAPACITOR	
C50	NCT07CH-6R0A	CAPACITOR	6PF
C51	NCT07CH-150A	CAPACITOR	15PF
C52	NCT07CH-100A	CAPACITOR	10PF
C53	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C54	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C55	NCT07CH-100A	CAPACITOR	10PF
C56	QCYA1EK-104	CAPACITOR	0.1μF,25V
C57	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C58	NEA20JM-226N	E CAPACITOR	22μF,6.3V
C59	NCT07CH-390A	CAPACITOR	39PF
C60	QEM71AM-826	E CAPACITOR	82μF,10V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
L1	YU40740-220K	COIL	22μH
L2	YU40740-220K	COIL	22μH
L3	YU40740-220K	COIL	22μH
L4	YU40740-220K	COIL	22μH
L5	YU40740-220K	COIL	22μH
L6	YU40740-220K	COIL	22μH
L7	YU40740-220K	COIL	22μH
L8	YU40740-220K	COIL	22μH
L9	YU40740-220K	COIL	22μH
L10	YU40740-220K	COIL	22μH
L11	YU40740-220K	COIL	22μH
L12	YU40740-220K	COIL	22μH
LPF1	PELN0368-02	LOW PASS FILTER	
	or PELN0366-02	LOW PASS FILTER	
LPF2	PELN0548	LOW PASS FILTER	
LPF3	PELN0548	LOW PASS FILTER	
LPF4	PELN0548	LOW PASS FILTER	
LPF5	PELN0369	LOW PASS FILTER	
LPF6	PELN0367-02	LOW PASS FILTER	
	or PELN0370-02	LOW PASS FILTER	
LPF7	PELN0367-02	LOW PASS FILTER	
	or PELN0370-02	LOW PASS FILTER	
⚠ X1	YU41728	CRYSTAL RESONATOR	
TP1	YU41389	TEST PIN,IRIS OPEN	
CN-31	YU41361-14	CAP HOUSING,(BOARD TO BOARD)	
CN-32	YU41358-30	CAP HOUSING,(BOARD TO BOARD)	
CN-33	YU41359-16	CAP HOUSING,(BOARD TO BOARD)	

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
**********			

CCD BOARD ASSEMBLY <14>

PWBA	YB20341E-02	CCD BOARD ASSY	
IC2	MN3110SA	IC	
Q1	2SD1819(QR)	TRANSISTOR	
	or 2SD1819A(QR)	TRANSISTOR	
Q2	2SC4181	TRANSISTOR	
D1	MA141WK	DIODE	
D2	MA141WK	DIODE	
D3	MA141WK	DIODE	
D5	MA141WK	DIODE	
D6	DA106U	DIODE	
R1	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
R2	NRSA63J-104N	RESISTOR	100KΩ,1/16W
R3	NRSA63J-104N	RESISTOR	100KΩ,1/16W
R4	NRSA63J-104N	RESISTOR	100KΩ,1/16W
R5	YU41218-104N	V RESISTOR,BLOOMING	
R6	NRSA63J-183N	RESISTOR	18KΩ,1/16W
R7	NRSA63J-102N	RESISTOR	1KΩ,1/16W
R8	NRSA63J-682N	RESISTOR	6.8KΩ,1/16W
R9	NRSA63J-332N	RESISTOR	3.3KΩ,1/16W
R10	NRSA63J-473N	RESISTOR	47KΩ,1/16W
R11	YU41218-473N	V RESISTOR,RESET	
R12	NRSA63J-105N	RESISTOR	1MΩ,1/16W
R13	NRSA63J-273N	RESISTOR	27KΩ,1/16W
R14	NRSA63J-153N	RESISTOR	15KΩ,1/16W
R15	NRSA63J-105N	RESISTOR	1MΩ,1/16W
R16	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
C1	NEA21CM-476N	E CAPACITOR	47μF,16V
C2	NEA21CM-106N	E CAPACITOR	10μF,16V
C3	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C4	NEA21CM-106N	E CAPACITOR	10μF,16V
C5	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C6	NEA21CM-106N	E CAPACITOR	10μF,16V
C7	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C8	NEE21CM-105R	TANTAL CAPACITOR	1μF,16V
C9	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C10	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C11	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C12	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C13	NEA20JM-107N	E CAPACITOR	100μF,6.3V
C14	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C15	NEA21CM-106N	E CAPACITOR	10μF,16V
C16	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C17	NEA21CM-106N	E CAPACITOR	10μF,16V
C18	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C19	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C20	NCB31HK-222A	CAPACITOR	0.0022μF,50V
C24	QCYA1EK-104	CAPACITOR	0.1μF,25V
L1	YU40740-220K	COIL	22μH
	or YU41135-220K	COIL	22μH
L2	YU40740-220K	COIL	22μH
	or YU41135-220K	COIL	22μH
L3	YU40740-220K	COIL	22μH
	or YU41135-220K	COIL	22μH
TP1	YU40581	TEST PIN,CCD OUT	
CN41	YU41361-16	CAP HOUSING,(BOARD TO BOARD)	
CN42	YU41616	CCD SOCKET	

****

AF BOARD ASSEMBLY <15>

PWBA	YB20342F-06	AF BOARD ASSY	
IC1	MN12821(QR)	IC	
IC2	HA13489MP	IC	
IC3	MN18888JFRS	IC	
	or MN18P888FAP	IC	
IC4	JCY0007-1	IC	
IC5	MM1036XF	IC	
IC6	LM358DB	IC	
IC7	M5236ML	IC	
IC11	LM324DB	IC	
Q1	2SB1132(QR)	TRANSISTOR	
Q2	DTA114EU	TRANSISTOR	
Q3	XP5601	TRANSISTOR	
Q5	XP2501	TRANSISTOR	
Q6	DTC114EU	TRANSISTOR	
Q11	2SB1218(QR)	TRANSISTOR	
Q12	2SD1819(QR)	TRANSISTOR	
	or 2SD1819A(QR)	TRANSISTOR	
D11	MA141WK	DIODE	
D12	MA28WA	DIODE	

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R1	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R3	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R5	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R6	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R7	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R8	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R9	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
	R10	NRSA63J-333N	RESISTOR	33KΩ,1/16W
	R11	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R12	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
	R13	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R15	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R16	NRSA63J-682N	RESISTOR	6.8KΩ,1/16W
	R17	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
	R18	NRSA63J-562N	RESISTOR	5.6KΩ,1/16W
	R19	NRSA63J-683N	RESISTOR	68KΩ,1/16W
	R20	NRSA63J-183N	RESISTOR	18KΩ,1/16W
	R21	NRSA63J-563N	RESISTOR	56KΩ,1/16W
	R22	NRSA63J-223N	RESISTOR	22KΩ,1/16W
	R24	NVP1201-222N	V RESISTOR,OFF SET	2.2KΩ,1/2W
	R27	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R28	NVP1201-334N	V RESISTOR,GAIN	330KΩ,1/2W
	R29	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
	R30	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
	R31	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
	R32	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
	R33	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R35	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R36	NRSA63J-681N	RESISTOR	680Ω,1/16W
	R37	NRSA63J-331N	RESISTOR	330Ω,1/16W
	R39	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R40	NRSA63J-361N	RESISTOR	360Ω,1/16W
	R41	NRSA63J-331N	RESISTOR	330Ω,1/16W
	R43	NRSA63J-681N	RESISTOR	680Ω,1/16W
	R44	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
	R45	NRSA63J-471N	RESISTOR	470Ω,1/16W
	R46	NRSA63J-183N	RESISTOR	18KΩ,1/16W
	R47	NRSA63J-683N	RESISTOR	68KΩ,1/16W
	R48	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
	R49	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R50	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
	R51	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R52	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
	R53	NRSA63J-273N	RESISTOR	27KΩ,1/16W
	R54	NRSA63J-183N	RESISTOR	18KΩ,1/16W
	R55	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
	R56	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
	R57	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
	R58	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R59	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R60	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R61	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R62	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R63	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R64	NRSA63J-104N	RESISTOR	100KΩ,1/16W
	R65	NRSA63J-104N	RESISTOR	100KΩ,1/16W
	R66	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
	R67	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
	R68	NRSA63J-272N	RESISTOR	2.7KΩ,1/16W
	R69	QRSA08J-331Y	RESISTOR	330Ω,1/10W
	R71	NRSA63J-182N	RESISTOR	1.8KΩ,1/16W
	R72	NRSA63J-471N	RESISTOR	470Ω,1/16W
	R73	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
	R75	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R76	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R77	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
	R78	NRSA63J-822N	RESISTOR	8.2KΩ,1/16W
	R79	NRSA63J-203N	RESISTOR	20KΩ,1/16W
	R80	NRSA63J-183N	RESISTOR	18KΩ,1/16W
	R81	NRSA63J-183N	RESISTOR	18KΩ,1/16W
	R86	NRSA63J-223N	RESISTOR	22KΩ,1/16W
	R87	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
	R89	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
	R90	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R91	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R92	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R93	NRSA63J-153N	RESISTOR	15KΩ,1/16W
	R94	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
	R95	NRSA63J-221N	RESISTOR	220Ω,1/16W
	R96	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
	R97	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R99	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
	R101	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R102	NRSA63J-751N	RESISTOR	750Ω,1/16W
	R103	NRSA63J-0R0A	RESISTOR	0Ω,1/16W
	R104	NRSA63J-104N	RESISTOR	100KΩ,1/16W
	R105	NRSA63J-562N	RESISTOR	5.6KΩ,1/16W
	R106	NRSA63J-222N	RESISTOR	2.2KΩ,1/16W
	R107	NVP1201-222N	V RESISTOR,EE LEVEL	2.2KΩ,1/2W
	R108	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R109	NRSA63J-223N	RESISTOR	22KΩ,1/16W
	R110	NRSA63J-223N	RESISTOR	22KΩ,1/16W
	R111	NRSA63J-102N	RESISTOR	1KΩ,1/16W
	R112	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R113	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R114	NRSA63J-223N	RESISTOR	22KΩ,1/16W
	R115	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R116	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R117	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R118	NRSA63J-103N	RESISTOR	10KΩ,1/16W
	R119	NRSA63J-271N	RESISTOR	270Ω,1/16W
	R130	NRSA63J-472N	RESISTOR	4.7KΩ,1/16W
	C1	NEH30JM-226N	E CAPACITOR	22μF,6.3V
	C2	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C3	NCB31EK-103A	CAPACITOR	0.01μF,25V
	C4	NEH30JM-226N	E CAPACITOR	22μF,6.3V
	C5	NCF31CZ-104A	CAPACITOR	0.1μF,16V
	C6	NCR21CK-473A	CAPACITOR	0.047μF,16V
	C7	NCR21CK-473A	CAPACITOR	0.047μF,16V

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C8	NEE20GM-475R	TANTAL CAPACITOR	4.7μF,4.0V
C9	NCR21CK-473A	CAPACITOR	0.047μF,16V
C10	NCT07CH-101A	CAPACITOR	100PF
C11	NCR31CK-223A	CAPACITOR	0.022μF,16V
C12	NCR21CK-473A	CAPACITOR	0.047μF,16V
C13	NCR31CK-223A	CAPACITOR	0.022μF,16V
C14	NCR21CK-473A	CAPACITOR	0.047μF,16V
C15	NCR31CK-223A	CAPACITOR	0.022μF,16V
C16	NCR21CK-473A	CAPACITOR	0.047μF,16V
C17	NCT07CH-101A	CAPACITOR	100PF
C18	QCYA1HK-273	CAPACITOR	0.027μF,50V
C19	NCT07CH-101A	CAPACITOR	100PF
C20	QCYA1HK-273	CAPACITOR	0.027μF,50V
C21	QCYA1HK-273	CAPACITOR	0.027μF,50V
C22	QCYA1HK-103	CAPACITOR	0.01μF,50V
C23	NCT07CH-121A	CAPACITOR	120PF
C24	NCT07CH-151A	CAPACITOR	150PF
C25	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C26	NCT07CH-220A	CAPACITOR	22PF
C27	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C28	NCT07CH-330A	CAPACITOR	33PF
C29	NCT07CH-330A	CAPACITOR	33PF
C30	NCB31EK-103A	CAPACITOR	0.01μF,25V
C31	NCT07CH-121A	CAPACITOR	120PF
C32	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C33	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C34	NCT07CH-151A	CAPACITOR	150PF
C35	NCT07CH-151A	CAPACITOR	150PF
C36	NCT07CH-151A	CAPACITOR	150PF
C37	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C40	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C41	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C43	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C44	QED41AM-826	E CAPACITOR	82μF,10V
C45	NEE21AM-106R	TANTAL CAPACITOR	10μF,10V
C46	NEE21CM-105R	TANTAL CAPACITOR	1μF,16V
C47	NCB31EK-103A	CAPACITOR	0.01μF,25V
C48	NCB31EK-103A	CAPACITOR	0.01μF,25V
C50	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C51	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C52	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C53	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C54	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C55	NCB31EK-103A	CAPACITOR	0.01μF,25V
C77	NCB31EK-103A	CAPACITOR	0.01μF,25V
C78	QCFA1CZ-105	CAPACITOR	1μF,16V
C79	NCF31CZ-104A	CAPACITOR	0.1μF,16V
C80	NCF31CZ-104A	CAPACITOR	0.1μF,16V
L1	YU40740-470K	COIL	47μH
L2	YU40740-220K	COIL	22μH
L3	YU40740-470K	COIL	47μH
L4	PU58201-330K	COIL	33μH
L5	PU58201-121K	COIL	120μH

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
BPF1	YU41493-2	BAND PASS FILTER
BPF2	YU41555-2	BAND PASS FILTER
⚠ X1	PEVB0362	RESONATOR
⚠	or PEVB0378	RESONATOR
SPC1	YQM30029-88	SPACER
TP1	YU40581	TEST PIN,HALL AMP OUT
CN51	YU41359-16	CAP HOUSING,(BOARD TO BOARD)
CN52	YU41359-6	CAP HOUSING,(BOARD TO BOARD)
CN53	YU41356-4	CAP HOUSING
CN54	YU41356-4	CAP HOUSING
CN55	YU41356-3	CAP HOUSING
CN56	YU41356-2	CAP HOUSING
CN57	YU41356-3	CAP HOUSING
CN58	YU41356-4	CAP HOUSING
CN59	YU41356-4	CAP HOUSING
CN60	YU41356-4	CAP HOUSING
⚠ CP1	ICP-F10	CIRCUIT PROTECTOR

****

TALLY BOARD ASSEMBLY <16>

PWBA	YB20460A-01	TALLY BOARD ASSY
LED1	LT1T52A	LE DIODE
SW1	YU41689	SLIDE SWITCH

****

JUNCTION BOARD ASSEMBLY <17>

PWBA	YB20459A-02	JUNCTION BOARD ASSY
CN1	YU41355-4	CAP HOUSING
CN2	YU41354-5	CAP HOUSING,(BOARD TO BOARD)
CN3	YU41356-9	CAP HOUSING

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
**********			

REAR BOARD ASSEMBLY <18>

PWBA	YB20461B-03	REAR BOARD ASSY,EG	
PWBA	YB20461E-03	REAR BOARD ASSY,EK/EA/EG(S)	
IC1	M5236ML	IC	
Q1	DTC124EK	TRANSISTOR	
	or UN2212	TRANSISTOR	
Q2	XN1601	TRANSISTOR	
Q3	2SB1202(ST)	TRANSISTOR	
Q4	2SB709(QR)	TRANSISTOR	
D1	MA151WK	DIODE	
D2	MA151WK	DIODE	
R1	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R2	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
R3	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
R4	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R5	QRSA08J-470YN	RESISTOR	47Ω,1/10W
R6	QRSA08G-513YN	RESISTOR	51KΩ,1/10W
	or QRSA08J-513YN	RESISTOR	51KΩ,1/10W
R7	QRSA08G-153YN	RESISTOR	15KΩ,1/10W
	or QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R8	QRSA08J-223YN	RESISTOR	22KΩ,1/10W
R9	QRSA08J-153YN	RESISTOR	15KΩ,1/10W
R10	QRSA08J-152YN	RESISTOR	1.5KΩ,1/10W
R11	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
R12	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
B1	1S2473	DIODE,EG	
B2	1S2473	DIODE,EG	
B3	QRSA08J-0R0Y	RESISTOR,EK/EA/EG(S)	0Ω,1/10W
C1	QER41AM-476T	E CAPACITOR	47μF,10V
C4	QEPA1CM-475	E CAPACITOR	4.7μF,16V
C5	QER41AM-476T	CAPACITOR	47μF,10V
C7	QEK41HM-225	E CAPACITOR	2.2μF,50V
C8	NEE21EM-105R	TANTAL CAPACITOR	1μF,25V
L1	PELN0563	FERRITE RING,EG	
L1	QRD162J-0R0	RESISTOR,EK/EA/EG(S)	0Ω,1/6W
SW1	YU41703	TACT SWITCH,SELECT	

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
SW2	YU41703	TACT SWITCH,SET(+)
SW3	YU41703	TACT SWITCH,SET(-)
SW4	YU41702	SLIDE SWITCH,LAMP
SW5	YU41702	SLIDE SWITCH,TAPE SELE
J1	YU40017-020-1	THIN WIRE
SPC1	YQM30029-90	SPACER
TML1	YQ41883	TERMINAL1(LB)
TML2	YQ42036	TERMINAL2(CLOCK)
CN1	YU41356-11	CAP HOUSING
CN2	YU41356-3	CAP HOUSING
⚠ CP1	ICP-F20	CIRCUIT PROTECTOR
**********		

DRUM BOARD <40>

PWB	YDM3055-1-5	UPPER DRUM BOARD,EK/EA/EG(S)
PWB	YDM3055-3-5	UPPER DRUM BOARD,EG

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

E.VF BOARD ASSEMBLY <50>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PWBA	YU30531-102	E.VF BOARD ASSY	
⚠	IC01	BA7147F	IC	
⚠	IC02	AN78L05	IC,RG1	
	Q01	2SA1163-BL	TRANSISTOR	
⚠	Q02	2SD1898T100R	TRANSISTOR	
	D01	ERA22-10	DIODE	
	D02	MA152WA	DIODE	
	R01	QRSA08J-104YN	RESISTOR	100KΩ,1/10W
	R02	QRSA08J-394YN	RESISTOR	390KΩ,1/10W
	R03	QRSA08J-393YN	RESISTOR	39KΩ,1/10W
	R05	QRSA08G-213YN	RESISTOR	21KΩ,1/10W
	R06	QRSA08J-182YN	RESISTOR	1.8KΩ,1/10W
	R07	QRSA08J-101YN	RESISTOR	100Ω,1/10W
	R09	QRSA08J-3R9YN	RESISTOR	3.9Ω,1/10W
	R10	QRSA08J-561YN	RESISTOR	560Ω,1/10W
	R11	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
	R12	QRSA08J-562YN	RESISTOR	5.6KΩ,1/10W
	R13	QRSA08J-273YN	RESISTOR	27KΩ,1/10W
	R14	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
	R15	QRSA08J-471YN	RESISTOR	470Ω,1/10W
	R16	QRSA08J-184YN	RESISTOR	180KΩ,1/10W
	R17	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
	R18	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
	R19	QRSA08J-225YN	RESISTOR	2.2MΩ,1/10W
	R20	QRSA08J-225YN	RESISTOR	2.2MΩ,1/10W
	R21	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
	R22	QRSA08J-222YN	RESISTOR	2.2KΩ,1/10W
	R23	QRSA08J-330YN	RESISTOR	33Ω,1/10W
	R24	QRSA08J-103YN	RESISTOR	10KΩ,1/10W
	R31	QRSA08J-102YN	RESISTOR	1KΩ,1/10W
	R32	QRSA08J-474YN	RESISTOR	470KΩ,1/10W
	R33	QRSA08J-472YN	RESISTOR	4.7KΩ,1/10W
	R101	YU30034-131	RESISTOR,JP01	
	R102	YU30034-131	RESISTOR,JP02	
⚠	R103	YU30034-131	RESISTOR,JP03	
	VR01	YU30407-111	V RESISTOR,H.HOLD	
	VR02	YU30407-112	V RESISTOR,V.SIZE	
	VR03	YU30407-118	V RESISTOR,BRIGHT	
	VR04	YU30407-119	V RESISTOR,FOCUS	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C01	QEK40JM-227	E CAPACITOR	220μF,6.3V
	C02	NEH31HM-105N	E CAPACITOR	1μF,50V
	C03	QCYA1EK-152	CAPACITOR	0.0015μF,25V
	C04	QEJ40JM-476	TANTAL CAPACITOR	47μF,6.3V
	C05	QCF81EZ-105	CAPACITOR	1μF,25V
	C06	QEF81VM-104	TANTAL CAPACITOR	0.1μF,35V
	C07	QCSA1HJ-680	CAPACITOR	68PF,50V
	C08	QCYA1HK-104	CAPACITOR	0.1μF,50V
	C09	YU30407-123	E CAPACITOR	0.012μF
	C10	QCYA1EK-683	CAPACITOR	0.068μF,25V
	C11	QCYA1EK-683	CAPACITOR	0.068μF,25V
	C12	PU36332-106	CAPACITOR	10μF
	C13	QEKA1HM-476	E CAPACITOR	47μF,50V
	C14	YU30407-124	CAPACITOR	0.12μF
	C15	PU36332-109	E CAPACITOR	0.0010F
	C20	PU36332-109	E CAPACITOR	0.0010F
	C21	QCYA1EK-103	CAPACITOR	0.01μF,25V
	C22	QCYA1EK-562	CAPACITOR	0.0056μF,25V
	C23	QCYA1EK-822	CAPACITOR	0.0082μF,25V
	C24	PU36332-108	E CAPACITOR	1000μF
	C25	QCSA1HJ-101	CAPACITOR	100PF,50V
⚠	L01	YU30531-109	H.L.COIL	
	L02	YU30407-115	INDUCTOR	
⚠	SW01	YU30407-122	SWITCH	
	TH01	YU30407-113	THERMISTOR	
⚠	T01	YU30531-108	FBT	
	WR21	YU30531-105	CRT SOCKET ASSY	
	CN1	YU40095-5	CAP HOUSING,P01	
	CN2	YU30407-121	CAP HOUSING,P02	
⚠	CN3	YU40095-2	CAP HOUSING,P03	
	CN4	YU40095-2	CAP HOUSING,P04	

– E.VF(TRIGGER) BOARD ASSEMBLY –

SW02	YU30531-107	SWITCH,TRIGGER	
WR1	YU30531-106	VF CABLE	
CN5	YU40096-2	CAP HOUSING,P05	

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

SECTION 8
TECHNICAL INFORMATIONS

8.1 MECHACON CPU (0 1 VTR IC301) PIN FUNCTIONS

NO.	SYMBOL	LABEL	IN/OUT	NOTE
1	P60/AN0	KEY SW-A	I	SWITCH CONDITION DETECT (STOP,REW,FF,PLAY,PAUSE,SP/LP)
2	P77	POWER LED	I	NOT USED
3	P76	POWER LED	O	POWER LED ON/OFF CONTROL (ON:L)
4	P75	–	–	GND
5	P74	–	–	GND
6	P73/SROY2	–	–	GND
7	P72/SCLK2	S.SCLK	O	DATA TRANSFER CLOCK OUTPUT (TO SERVO IC101-25PIN)
8	P71/SOUT2	S.DATA	O	SERIAL DATA OUTPUT FOR SERVO CONTROL (TO SERVO IC101-26PIN)
9	P70/SIN2	–	–	GND
10	P57/DA2	–	–	GND
11	P56/DA1	CAP M REF	O	CAPSTAN MOTOR DRIVE CONTROL (TO IC102-27PIN)
12	P55/CNTR1	SUP SENS	I	REEL ROTATION DETECT,TAPE REMAIN DETECT
13	P54/CNTR0	CAP FG	I	TAPE SPEED(PB MODE) DETECT,TAPE REMAIN DETECT
14	P53/NT4	MODE D	I	REC TAIMING CONTROL(REC START/STOP)
15	P52/INT3	PB CTL P	I	TAPE SPEED(PB MODE) DETECT,TRACKING CONTROL,EDIT CONTROL
16	P51/INT2	REC SAFE	I	DETECTS ERASE PROTECT TAB(TAB ABSENT:H) AND TAPE IN DETECT
17	P50	SYNC CHG	O	SYNC(VD PULSE/HD PULSE) SELECT
18	P47/SRDY1	C.SRDY	I	CLOCK OUTPUT PERMISSION (TO CAMERA CPU-21PIN)
19	P46/SCLK1	C.SCLK	O	DATA TRANSFER CLOCK OUTPUT (TO CAMERA CPU-22PIN)
20	P45/TXD	C.SDATA	O	SERIAL DATA OUTPUT FOR CAMERA CPU CONTROL (TO 24PIN)
21	P44/RXD	C.RDATA	I	SERIAL DATA INPUT FROM CAMERA CPU (TO 23PIN)
22	P43/INT1	DRUM FF	I	DRUM MOTOR ROTATION DETECT AND END LED ON TIMING CONTROL
23	P42/INT0	KEY SW-C	I	SWITCH CONDITION DETECT(POWER,EJECT SW) AND REMOTE DATA INPUT
24	CNVSS	CNVss	I	GND
25	RESET	RESET	I	RESET:L
26	P41	END LED	O	END LED ON/OFF CONTROL(ON:H)
27	P40	LAMP ON	O	LAMP ON/OFF CONTROL(ON:H)
28	XIN	XI	I	MAIN SYSTEM CLOCK
29	XOUT	XO	O	(4MHz)
30	VSS	Vss	–	GND
31	P27/DB7	V.EE	O	V.EE:L
32	P26/DB6	V.ALL MUTE	O	MUTE ON:H
33	P25/DB5	V.PB	O	V.PB:L
34	P24/DB4	V.REC	O	V.REC:L
35	P23/DB3	LD REV	O	MOTOR DRIVER CTL
36	P22/DB2	LD FWD	O	(to IC302)
37	P21/DB1	TRG OUT	O	REMOTE PAUSE ON:H (TRG CTL)
38	P20/DB0	DECK P CTL	O	POWER ON:H
39	P17/AD15	LAMP SW	I	LAMP CONDITION DETECT(ON:L)
40	P16/AD14	TAPE SEL	I	TAPE SELECT(L:30M/OPEN:45M)
41	P15/AD13	ALM SW	I	ALAME SW DETECT(ON:L)
42	P14/AD12	TR +	I	TRACKING + KEY DETECT (SW ON:L)
43	P13/AD11	TR –	I	TRACKING – KEY DETECT (SW ON:L)
44	P12/AD10	CAM SW-A	I	MECHANISM MODE DETECT
45	P11/AD9	CAM SW-B	I	MECHANISM MODE DETECT
46	P10/AD8	CASS SW	I	HOUSING CONDITION DETECT (LOCK ON:L)
47	P07/AD7	TEST 1	I	NORMAL:H (NO EMG MODE:L)
48	P06/AD6	TEST 0	I	NORMAL:H (NO EMG MODE:L)
49	P05/AD5	MODE SET	I	WITH LP MODE: L, WITHOUT LP MODE: H
50	P04/AD4	MODE SET	I	WITH LP MODE: L, WITHOUT LP MODE: L
51	P03/AD3	–	–	GND
52	P02/AD2	–	–	GND
53	P01/AD1	S.ENABL	I	NORMAL:H (FOR JIG MODE)

<IC302>

MODE/PIN	IN2	IN4	OUT5	OUT1
STOP	L	L	–	–
FWD	H	L	H	L
REV	L	H	L	H
BRAKE	H	H	L	L

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

NO.	SYMBOL	LABEL	IN/OUT	NOTE
54	P00/AD0	S.LOCK	I	SERVO CONDITION DETECT (LOCK ON:L),TO SERVO IC101-21PIN
55	P37/RD	C RST P	O	COLOR RESET PULSE OUT (X'TAL TIMING CORRECTION)
56	P36/WR	V.REC MUTE	O	VIDEO REC MUTE CONTROL (MUTE ON:L)
57	P35/SYNC	S.ENVELOP	O	SIGNAL SELECT (NORMAL:L,CLOG CHECK ON(ASSEMBLY MODE):H)
58	P34/ϕ	DUBBING	O	DUBBING MODE:L(EDIT SW ON:L)
59	P33/RSTOUT	FE H ON	O	FE HEAD CONTROL (ON:H)
60	P32/ONW	V.SW OFF	O	VIDEO HEAD SW CONTROL (OFF:H)
61	P31	CTL ERS	O	CTL ERASE HEAD CONTROL (ON:H)
62	P30	ARM ON	O	ALARM CONTROL (ON:H)
63	P87	NC	–	NC
64	P86	A.BIAS	O	AUDIO BIAS CONTROL (ON:H)
65	P85	A.MUTE	O	AUDIO MUTE CONTROL (MUTE ON:H)
66	P84	A.PB	O	PB MODE:L/EE MODE:H
67	P83	TU SENS	I	REEL ROTATION DETECT,TAPE REMAIN DETECT
68	P82	POWER SW	I	POWER SW DETECT(ON:L/OFF:H)
69	P81	EJECT SW	I	EJECT SW DETECT(ON:L/OFF:H)
70	P80	TRG SW	I	TRIG SW DETECT(ON:L/OFF:H)
71	VCC	VCC	–	AL5V
72	VREF	REG 5V	–	REG 8V(5V)
73	AVSS	AVSS	–	GND
74	P67/AN7	–	–	GND
75	P66/AN6	EMG REQ	I	NORMAL:L,H:REG SHORT → POWER OFF
76	P65/AN5	BATT CHK	I	POWER DOWN DETECT (5.55/ALARM,5.4/POWER OFF)
77	P64/AN4	DEW SENS	I	NORMAL:L,SENSOR ON:H
78	P63/AN3	AVG FM	I	PB FM IN(DC VOLTAGE FOR AT DETECT AND FM WAVE FOR CLOG CHECK)
79	P62/AN2	KEY SW-B	I	SWITCH CONDITION DETECT (ENCORE,EDIT,Q.REV,SW.COVER)
80	P61/AN1	END SENS	I	TAPE END DETECT (TAPE END:L)

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

8.2 AUTOMATIC OPERATION OF MECHACON

1. Tape end detection
   When the end sensor is turned on as the capstan motor is rotating in the FF direction, the mechanism is shifted to the Unloading Stop mode.
   In the FF mode, tape end is detected by the reel sensor.
2. Tape start detection
   When REEL FG signal does not vary for more than 2 sec as the capstan motor is rotating in the REW direction, the mechanism is shifted to the Loading Stop mode.
   In the REW mode, this operation shifts the mechanism to the Unloading Stop mode.
3. Drum rotation detection
   When DRUM FF signal does not vary for more than 2 sec in a mode that the drum must be rotating, the mechanism is shifted to the Unloading Stop mode and the related emergency number is displayed in the electronic viewfinder.
4. Reel rotation detection
   When REEL FG signal does not vary for a time longer than that described below in a mode that the reel must be rotating, the mechanism is shifted to the Unloading Stop mode and the related emergency number is displayed in the electronic viewfinder.

	Supply Reel FG	Take-up Reel FG
REC/PB	10.0 sec	4.2 sec
Preroll	4.2 sec	10.0 sec
Search FF	2.0 sec	2.0 sec

5. Capstan rotation detection
   When no output of CAPSTAN FG signal is obtained in the Assembly Edit mode, the mechanism is shifted to the Unloading Stop mode and the related emergency number is displayed in the electronic viewfinder.
6. Control pulse detection
   When no output of control pulse signal is obtained in recording of VISS code with an optional remote control unit, the mechanism is shifted to the Unloading Stop mode and the related emergency number is displayed in the electronic viewfinder.
7. Loading/Unloading overtime
   If loading operation does not finish with 10 sec after the Loading/Unloading operation started, the operation is stopped and the related emergency number is displayed in the electronic viewfinder.
8. Power-saving
   - When the machine is left in the Stop mode approximately for more than 5 minutes, the power is automatically turned off except in the Rehearsal mode.
   - When the machine is left in the PB Pause mode approximately for more than 5 minutes, the mechanism is shifted to the Stop mode and the power is turned off another 5 minutes after.
   - When the machine is left in the REC Pause mode approximately for more than 5 minutes, the mechanism is shifted to the REC Lock mode and then the power is turned off.

8.3 EMERGENCY DISPLAY

Whenever some abnoral signal is supplied to mechacon CPU, the POWER LED will be flickered and an error number (E05, for example) displayed on the electronic view finder.

E. VF DISPLAY	Symptom	Mode when observed	Resulting mode
E 06	CAPSTAN FG input absent	EDIT	STOP
E 05	PB CTL PULSE input absent	EDIT	STOP
E 04	DRUM FF input absent	DRUM rotation	STOP
E 03	REEL FG input absent	REC, PLAY, SEARCH FF	STOP
E 02	Mode control motor rotates for more than 10 sec. without shift to next mode.	UNLOADING	Mode continues
E 01	Mode control motor rotates for more than 10 sec. without shift to next mode.	LOADING	Mode continues

Emergency mode : Indication for 5 minutes, then power OFF
Port states : Same as Stop mode
Effective key : POWER
Shifted mode : Power OFF

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

8.4 SERVO LSI ([0][1] VTR IC101) PIN FUNCTIONS

NO.	SYMBOL	LABEL	IN/OUT	NOTE
1	ADVPULSE	ADV	OUT	TRACKING CORRECTION PULSE OUTPUT
2	CAPCTL	CTL CTL	OUT	SIGNAL SELECT(CAPSTAN MOTOR DRIVE CONTROL),SERVO MODE:L
3	SPB	SP	OUT	SP:L
4	FMEMV	FM EMV	IN	FM SIGNAL DETECT
5	CPV	C APC	OUT	CAPSTAN PHASE CONTROL PWM PULSE OUTPUT
6	CFV	C AFC	OUT	CAPSTAN SPEED CONTROL PWM PULSE OUTPUT
7	CBRK	BRK	OUT	CAPSTAN BRAKE CONTROL(BRAKE PULSE ON :H)
8	CAP FWDB	FWD	OUT	FWD/REV ROTATION OF CAPSTAN MOTOR
9	HYSWIDTH	HYWID	OUT	CTL PULSE REWRITE CONTROL SIGNAL (REC MODE:H)
10	CTLWRITE	WRITE	OUT	CTL PULSE REWRITE CONTROL SIGNAL (WRITE:H,READ:L)
11	RECDUTY	DUTY	OUT	DUTY CONTROL
12	TESTB	NC	–	NC
13	REFOSC	REF OSC	IN	REFERENCE CLOCK INPUT (TO SYSCON CPU)
14	GND	GND	–	GND
15	YNRPULSE	YNR PULSE	–	NC
16	VPULSEON	VP ON	OUT	V PULSE ON/OFF MODE CONTROL(ON:H)
17	VPULSE	V PULSE	OUT	V PULSE OUTPUT(SPECIAL PB MODE ON)
18	CSYNC	C SYNC	IN	COMPOSITE SYNC INPUT (FOR PULSE GENERATE)
19	FLAME PLS	FRAME	IN	FRAME PULSE INPUT (FROM CAMERA SECTION)
20	AVRECB	AV REC	–	NOT USED
21	SLOCKOUT	S LOCK	OUT	SERVO LOCK DETECT(LOCK ON:L) TO SYSCON CPU
22	CFG	C FG	IN	CAPSTAN FG INPUT
23	PBCTL	PB CTL PLS	IN	PB CTL PULSE INPUT
24	DFF	DFF	OUT	DRUM FLIPFLOP PULSE OUTPUT TO SYSCON CPU
25	SCLK	S CLK	IN	DATA TRANSFER CLOCK INPUT
26	SDATA	S DATA	IN	SERIAL DATA INPUT(16BIT) TO SYSCON CPU
27	EPDLYMM	EP DLY	–	EP MODE REC TIMING CORRECTION
28	POWERON	P ON RST	IN	POWER ON RESET :L
29	VDD	VDD	–	SYSTEM POWER SOURCE(DIGITAL)
30	MONITOR D	D MON	OUT	DRUM PHASE MONITOR OUTPUT (TP104)
31	MONITOR C	C MON	OUT	CAPSTAN PHASE MONITOR OUTPUT (TP105)
32	SYSSEL2	SEL 2	IN	SYSTEM SELECT (NORMAL:H)
33	SYSSEL1	SEL 1	IN	SYSTEM SELECT (NORMAL:H)
34	DPOWERUP	D.PUP	–	NC
35	CPOWERUP	C.PUP	–	NC
36	TURNEP	T.EP	–	NC
37	TURNSP	T.SP	–	NC
38	NTSC	NT/Z	IN	TYPE SELECT (NTSC:L)
39	DRUMON	D ON	OUT	DRUM ON/OFF CONTROL(D ON:H)
40	SWMM	SW MM	–	HEAD SWITCHING MMV TERMINAL
41	DPFG	D PG/FG	IN	DRUM PG/FG INPUT
42	GND	GND	–	GND
43	DPV	D APC	OUT	DRUM PHASE CONTROL PWM PULSE OUTPUT
44	DFV	D AFC	OUT	DRUM SPEED CONTROL PWM PULSE OUTPUT
45	GAINDOWN	G DOW	OUT	GAIN CONTROL
46	A SW D	A – D	–	NC
47	A SW C	A – C	–	NC
48	A SW B	A – B	–	NC
49	A SW A	A – A	–	NC
50	A FF	A FF	–	NC
51	V SW D	V – D	OUT	SWITCHING PULSE OUTPUT FOR VIDEO SIGNAL (V SW D)
52	V SW C	V – C	OUT	SWITCHING PULSE OUTPUT FOR VIDEO SIGNAL (V SW C)
53	V SW B	V – B	OUT	SWITCHING PULSE OUTPUT FOR VIDEO SIGNAL (V SW B)
54	V SW A	V – A	OUT	SWITCHING PULSE OUTPUT FOR VIDEO SIGNAL (V SW A)
55	H FF	H FF	–	NC
56	V FF	V FF	OUT	SWITCHING PULSE OUTPUT

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

Special functions of servo IC

1. To fix DRUM PHASE OUT (pin 43)
   - When DRUM FG frequency comes off the tolerance of ±10%.
2. To fix CAPSTAN PHASE OUT (pin 5)
   - When DRUM FG frequency comes off the tolerance of ±10%.
   - When CAPSTAN FG frequency comes off the tolerance of ±10%.
   - When 2 or more PB CTL pulses drop out in playback.
   - In the Pause mode
3. DRUM POWER UP (pin 34)
   - To output High potential when DRUM FG frequency is −17% of or lower than the specified value.
   - To output Low potential when DRUM FG frequency is −12% of or higher than the specified value.
4. CAPSTAN POWER UP (pin 35)
   - To output High potential when CAPSTAN FG frequency is −10% of or lower than the specified value.
   - To output Low potential when DRUM FG frequency is −7% of or higher than the specified value.
   - To output High potential in the Search or Retake-REV mode.
   - To output Low potential in the Pause mode.
5. SERVO LOCK OUT (pin 21)
   - To output Low potential when sampling both of the DRUM and CAPSTAN phases are performed for 4 frames in the slope period.
6. MONITOR OUT (pins 30, 31)
   - To output sampling pulses of the DRUM and CAPSTAN phases in double in the slope period of the trapezoidal waveform.

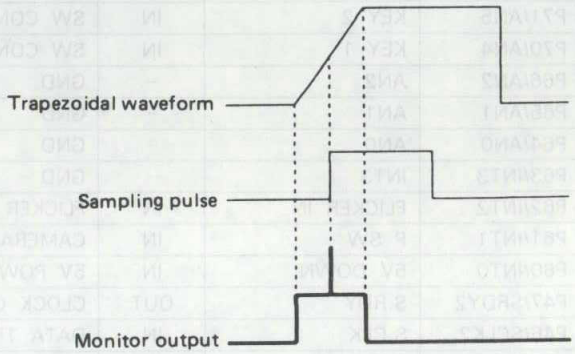


Fig. 8-4-1 Monitor output

Free service manuals
Gratis schema's
Digitized by
www.freeservicemanuals.info

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

8.5 CAMERA CPU (1 1 CPU IC1) PIN FUNCTIONS

NO.	SYMBOL	LABEL	IN/OUT	NOTE
1	D/AOUT3	R	OUT	RED LEVEL CONTROL FOR AW CORRECTION
2	D/AOUT2	B	OUT	BLUE LEVEL CONTROL FOR AW CORRECTION
3	D/AOUT1	FL	OUT	B-Y LEVEL CONTROL FOR FLICKER CORRECTION
4	D/AOUT0	Y GAIN	OUT	Y GAIN UP WHEN LOW LIGHT AND GAIN UP MODE
5	P73/AN7	AW IN	IN	WHITE BALANCE SENSOR DATA(DC VOLTAGE) INPUT
6	P72/AN6	KEY 4	IN	SW CONDITION DETECT (SELECT,SET(+),SET(-))
7	P72/AN6	KEY 3	IN	SW CONDITION DETECT (DISPLAY,MODE,SHUTTER,FADER,FULL AUTO,GAIN UP)
8	P71/AN5	KEY 2	IN	SW CONDITION DETECT (TITLE,COLOR,TITLE.M,NAGA/POGI/CINEMA)
9	P70/AN4	KEY 1	IN	SW CONDITION DETECT (C.RESET,C.MEMO.FOCUS)
10	P66/AN2	AN2	–	GND
11	P65/AN1	AN1	–	GND
12	P64/AN0	AN0	–	GND
13	P63/INT3	INT3	–	GND
14	P62/INT2	FLICKER IN	IN	FLICKER PULSE FOR FL FLICKER DETECT
15	P61/INT1	P SW	IN	CAMERA POWER CONTROL
16	P60/INT0	5V DOWN	IN	5V POWER DOWN DETECT
17	P47/SRDY2	S.RDY	OUT	CLOCK OUTPUT PERMISSION
18	P46/SCLK2	S.CLK	IN	DATA TRANSFER CLOCK
19	P45/SOUT2	S.OUT	OUT	SERIAL DATA OUTPUT TO AF IC3-37PIN
20	P44/SIN2	S.IN	IN	SERIAL DATA INPUT FROM AF IC3-38PIN
21	P43/SRDY1	S.RDY	OUT	CLOCK OUTPUT PERMISSION
22	P42/S.CLK1	S.CLK	IN	DATA TRANSFER CLOCK
23	P41/SOUT1	S.OUT	OUT	SERIAL DATA OUTPUT TO SYSCON CPU-21PIN
24	P40/SIN1	S.IN	IN	SERIAL DATA INPUT FROM SYSCON CPU-20PIN
25	XCIN	X IN	IN	CLOCK FOR TIME AND DETA CONTROL
26	XCOUT	X OUT	OUT	(32kHz)
27	CNVSS	CNVSS	–	GND
28	ϕ	ϕ	–	NC
29	RESET	RESET	–	RESET:L
30	X IN	IN	IN	SYSTEM CLOCK
31	X OUT	OUT	OUT	(4MHz)
32	VSS	VSS	–	GND
33	P27/DB7	IRIS CLOSE	OUT	IRIS CONTROL (STOP OR FF/REW MODE:H)
34	P26/DB6	JIG CTL	–	NORMAL:H (FOR JIG UNIT)
35	P25/DB5	TALLY	OUT	TALLY LAMP CONTROL (LAMP ON:H)
36	P24/DB4	REEL CTL PLS	IN	REEL FG FOR E.VF TAPE COUNTER DISPLAY
37	P23/DB3	V.REC MODE	–	NOT USED
38	P22/DB2	AW SENS 3	OUT	WHITE BALANCE SENSOR OUTPUT SELECT
39	P21/DB1	AW SENS 2	OUT	WHITE BALANCE SENSOR OUTPUT SELECT
40	P20/DB0	AW SENS 1	OUT	WHITE BALANCE SENSOR OUTPUT SELECT
41	P17/AD15	DATA IN	IN	EEP ROM READ DATA FROM IC2-4PIN
42	P16/AD14	DATA OUT	OUT	EEP ROM WRITE DATA TO IC2-3PIN
43	P15/AD13	S.CLK	OUT	DATA TRANSFER CLOCK TO IC2-1PIN
44	P14/AD12	CS	OUT	CLOCK OUTPUT PERMISSION (CHIP SELECT)
45	P13/AD11	T CLK	OUT	DATA TRANFER CLOCK
46	P12/AD10	T DATA	OUT	TITLE MEMORY DATA READ/WRITE CONTROL
47	P11/AD 9	T RDY	OUT	CLOCK OUTPUT PERMISSION
48	P10/AD 8	S RAM CTL	OUT	TITLE MEMORY DATA BACK UP CONTROL (BACK UP MODE:L)
49	P09/AD 7	FADE MODE2	–	NOT USED
50	P06/AD 6	FADE MODE1	–	NOT USED
51	P05/AD 5	SHT 3	OUT	
52	P04/AD 4	SHT 2	OUT	
53	P03/AD 3	SHT 1	OUT	

SHUTTER MODE	1/50	1/125	1/250	1/500	1/1000	1/4000	1/60
	L	L	L	L	H	H	H
	L	L	H	H	L	H	H
	L	H	L	H	L	L	H

Published in Heiloo, Holland.

www.freeservicemanuals.info

Digitized by WWW.FREESERVICEMANUALS.INFO

NO.	SYMBOL	LABEL	IN/OUT	NOTE
54	P02/AD 2	LLL	IN	IRIS OPEN:L
55	P01/AD 1	L BAT AM	OUT	L.BATT POWER DOWN DETECT FOR E.VF DISPLAY
56	P00/AD 0	JIG ENA	–	NORMAL:L (FOR JIG UNIT)
57	P37/SYNC	SYNC	–	GND
58	P36/RDB	RDB	–	GND
59	P35/WRB	CINEMA MODE	OUT	CINEMA MODE CONTROL (:H)
60	P34/CNTR	FLICKR IN	IN	FOR FL FLICKER DETECT (AUTO SHUTTER SELECT)
61	P33	FADER CTL SW	–	NOT USED (AL 5V)
62	P32	OSD MODE SW	–	NOT USED (REG 5V)
63	P31	C PWR ON	OUT	CAMERA POWER CONTROL (POWER ON:H)
64	P30/OUT2	OUT2	OUT	FIRNG PULSE OUTPUT FOR TIME AND DATE DISPLAY
65	OUT1	OUT 1	–	NC
66	I	I	–	NC
67	B	B	OUT	CHARACTOR PULSE OUTPUT FOR TIME AND DATE DISPLAY
68	G	G	OUT	CHARACTOR PULSE OUTPUT FOR E.VF DISPLAY
69	R	R	–	NC
70	OSC1	OSC 1	IN	CLOCK FOR OS DISPLAY
71	OSC2	OSC 2	OUT	AND BLANCKING PULSE CONTROL
72	VCC	VCC	–	VCC (5V)
73	VSS	VSS	–	VSS (GND)
74	VSYNC	VD	IN	V DRIVE PULSE INPUT FOR DISPLAY CONTROL
75	HSYNC	HD	IN	H DRIVE PULSE INPUT FOR DISPLAY CONTROL
76	AVCC	AVCC	–	AVCC (REG 5V)
77	AVSS	AVSS	–	AVSS (GND)
78	VREF	VREF	IN	REFERENCE SIGNAL FOR A/D,D/A CONVERTER
79	D/AOUT5	V FADE	OUT	VIDEO FADER CONTROL
80	D/AOUT4	A FADE	OUT	AUDIO FADER CONTROL

8.6 AUTO FOCUS CPU (1 5 AF IC3) PIN FUNCTIONS

NO.	SYMBOL	LABEL	IN/OUT	NOTE
1	ADC2	ZOOM ENC	IN	ZOOM LENS POSITION DETECT
2	ADC1	HE	IN	IRIS SIZE DETECT
3	ADC0	AFS	IN	CONTRAST DETECT
4	VREF	REF1V(1/4V)	OUT	REFERENCE VOLTAGE (1V)
5	S/H2	–	–	S/H CAPACITOR FOR A/D CONVERTER
6	AVSS	AVSS	–	GND
7	P67	–	–	NC
8	P66	PS	OUT	POWER SAVE CONTROL WHEN MOTOR STOP
9	P65	V AREA	OUT	V BLANKING PULSE OUTPUT FOR AF DETECT
10	P64	–	–	NC
11	P63	FAR	OUT	AF MOTOR DRIVE TO IC2-3PIN
12	P62	NEAR	OUT	-2PIN
13	P61	AFS DATA	OUT	AF PROCESSOR CH SELECT & GAIN CONTROL(13BIT SERIAL DATA)
14	P60	AFS CLK	OUT	SERIAL DATA TRANSFER CLOCK
15	EX1	EX1	–	GND
16	P57	WIDE	OUT	ZOOM MOTOR DRIVE TO IC5-7PIN
17	P56	TELE	OUT	-8PIN
18	P55	–	–	NC
19	P54	∞ LED	OUT	LOW WHEN MASTER LENS ∞ POSITION CHECK
20	P53	CS READY	OUT	CLOCK OUTPUT PERMISSION
21	P52	–	–	NC
22	P51	–	–	NC
23	P50	–	–	NC
24	RST	RESET	IN	POWER ON RESET
25	OSC1	OSC 1	IN	MAIN SYSTEM CLOCK
26	OSC2	OSC 2	OUT	(8MHz)

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

NO.	SYMBOL	LABEL	IN/OUT	NOTE
27	VSS	VSS	–	VSS
28	P23	–	–	NOT USED
29	P27	HD	IN	MAIN REFERENCE PULSE INPUT FOR SYSTEM DRIVE
30	P26	–	–	NC
31	P25	–	–	NC
32	P24	VD	IN	REFERENCE PULSE FOR V AREA SELECT
33	P22	H AREA	OUT	H BLANKING PULSE OUTPUT FOR AF DETECT
34	P21	–	–	NOT USED
35	P20	HD	IN	REFERENCE PULSE FOR H AREA SELECT
36	P07	SERIAL CLOCK	IN	SERIAL DATA TRANSFER CLOCK
37	P06	SERIAL DATA I	IN	SERIAL DATA IN
38	P05	SERIAL DATA O	OUT	SERIAL DATA OUT
39	P01	–	–	NC
40	P00	–	–	NC
41	P47	FOUCUS(–)	IN	SW CONDITION DETECT (SW ON:L)
42	P46	FOUCUS(+)	IN	SW CONDITION DETECT (SW ON:L)
43	P45	WIDE SW	IN	SW CONDITION DETECT (SW ON:L)
44	P44	TELE SW	IN	SW CONDITION DETECT (SW ON:L)
45	P43	JIG MODE	–	NORMAL:H (FOR JIG UNIT)
46	P42	V REC MODE	OUT	
47	P41	JIG S.CUT	–	NORMAL:H (FOR JIG UNIT)
48	P40	JIG SW	–	NORMAL:H (FOR JIG UNIT)
49	P77	JIG CLK	–	NORMAL:H (FOR JIG UNIT)
50	P76	JIG DATA	–	NORMAL:H (FOR JIG UNIT)
51	P75	–	–	NC
52	P74	–	–	NC
53	P73	–	–	NC
54	P72	–	–	NC
55	P71	–	–	NC
56	P70	–	–	NC
57	VDD 5V	VDD	–	VDD (5V)
58	AVDD 5V	AVDD	–	AVDD (5V)
59	VREF	REV 4V	IN	REFERENCE VOLTAGE FOR SYSTEM POWER (4V)
60	DAC1	–	–	NC
61	S/H1	–	–	GND
62	DAC0	ZOOM **	OUT	ZOOM MOTOR SPEED CONTROL TO IC5–5PIN(SPEED UP WHEN AUTO MACHRO)
63	S/H0	–	–	GND
64	ADC3	∞ SENS IN	IN	MASTER LENS ∞ POSITION DETECT

Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

8.7 AUTO WHITE PRESET MODE

NOTE:

- ***If good white balance cannot be obtained due to complex lighting conditions (e.g., dealer showroom with multiple light sources of differing color temperature, which cause a difference between the color temperature of the camera subject and that detected by the sensor), the preset mode can be used to produce acceptable white balance.***
- ***The white balance is fixed in the preset mode and normal auto white balance does not operate.***
- ***Be sure to release the preset mode under normal lighting conditions. The normal auto white balance then operates.***

1. Preset mode operation

Preparation: Insert lithium battery, enter date, time and birthday.

1) Set to the rehearsal mode.
2) Press both the focus and shutter buttons for more than five seconds to produce the on-screen mode. The display shown in Fig. 8-7-1 appears at the bottom of the screen to indicate the preset mode.

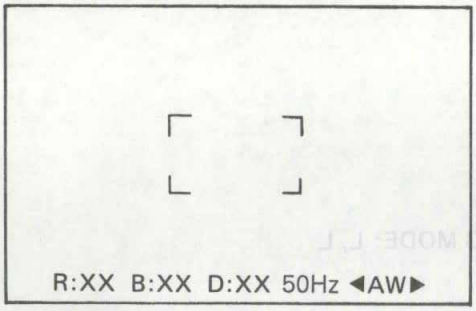


Fig. 8-7-1

3) Press the fader button the desired number of times. Observe the monitor and select the setting for best white balance. At each pressing of the button, the light source output data changes and the data number (1–15) is indicated at the lower right of the screen. ◀ AW ▶ indicates the normal white balance mode.
4) After selecting the desired preset value, press the full auto button. The display extinguishes and the preset mode is released.

The selected preset value is stored as fixed white balance control data regardless of the sensor.
Mode backup is provided by the batteries (lithium and battery pack).

2. Preset mode release

The preset mode can be released by any one of the following methods.

1) In the rehearsal mode, hold the focus button depressed and press the full auto button.
2) In the preset mode, select ◀ AW ▶ .
3) Remove both batteries (lithium and battery pack).

The normal auto white balance is returned, which uses the sensor input.

Note: ***Be sure to use auto white balance for normal operation.***

8.8 DC LIGHT

The DC light built in this model uses a 3-watt bulb (6.0 V DC), which enables the camera to be used in dark places with one touch of the light button.
The main specifications of the bulb are 55 lux of illumination, 22° of illumination angle, approx. 50 hours of service life, however, these are standard values and vary depending on operation, conditions.
In addition, note that use of the DC light shortens hours of continuous operation by the battery. The following table shows average operation burst with the DC light on/off.

Battery	DC light off	DC light on
BN-V14U	50 minutes	30 minutes
BN-V22U	90 minutes	65 minutes

Table 8-8-1 Continuous operation hours (standard)

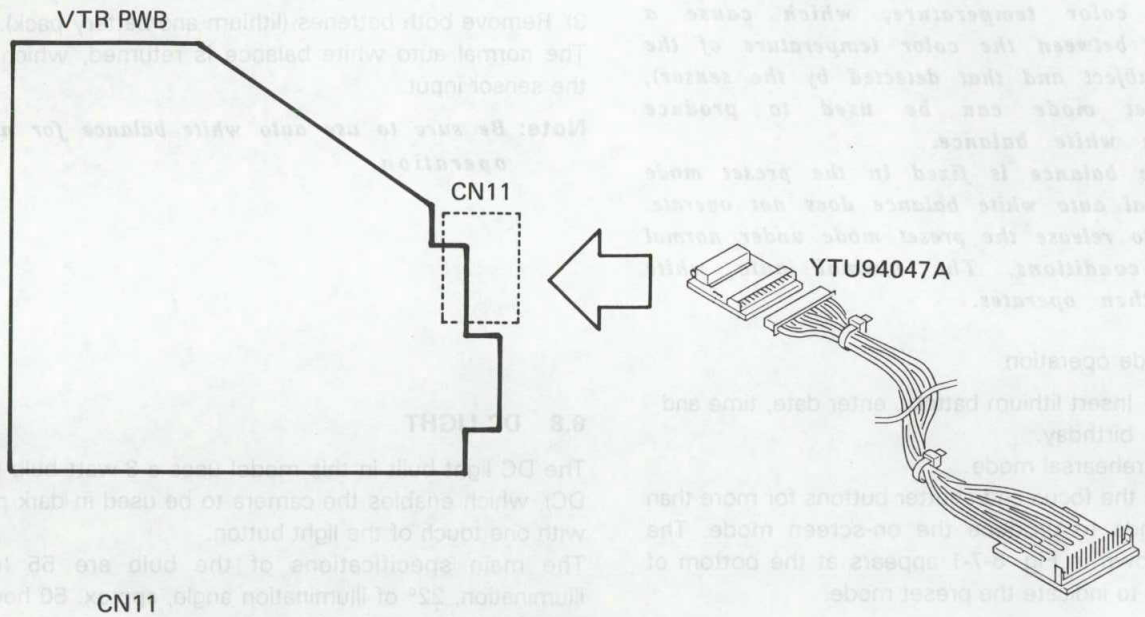
Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

Digitized by WWW.FREESERVICEMANUALS.INFO

8.9 SERVICE KNOW-HOW

• TEST POINT FIXTURES



CN11

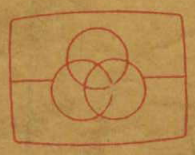
1 PIN: V FM	8 PIN: S CLK
2 PIN: NC	9 PIN: S DATA
3 PIN: LD FAST	10 PIN: S ENABLE
4 PIN: FM GND	11 PIN: REG 5V
5 PIN: D FF	12 PIN: TEST 1
6 PIN: V SW-A	13 PIN: TEST 0
7 PIN: PB CTL P	14 PIN: GND

NOTE: 11, 12 PIN (TEST 1, 0): NORMAL: H, H/NO EMG MODE: L, L

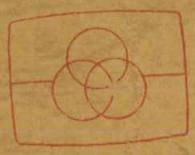
Published in Heiloo, Holland.

www.freeservicemanuals.info 3/13/16

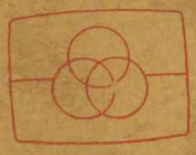
Digitized by WWW.FREESERVICEMANUALS.INFO



Free service manuals
Gratis schema`s
Digitized by
www.freeservicemanuals.info



Free service manuals
Gratis schema`s
Digitized by
www.freeservicemanuals.info



Free service manuals
Gratis schema`s
Digitized by
www.freeservicemanuals.info

JVC

VICTOR COMPANY OF JAPAN, LIMITED

Published in Heiloo, Holland.

Printed in Jap
9108 (Sanwa-